# American Aviation

APRIL 2, 1951 35c

THE INDUSTRY'S FIRST NEWS MAGAZINE



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## The R-N Team

NOW THAT the President has officially sent to the Senate for confirmation the names of the three men who are taking over newer and bigger aviation jobs in the government, the industry can take a longer look at the significance of these important moves.

Back of these moves is the success story of a team—the Rentzel-Nyrop team. Shortly after Delos W. Rentzel became Civil Aeronautics Administrator several years ago, he hired Donald W. Nyrop as his chief deputy. When Rentzel became CAB Chairman last year, Nyrop became CAA Administrator. Now Rentzel moves upstairs again to be Under Secretary of Commerce, Nyrop becomes CAB Chairman and a new member of the team, Charles F. Horne, becomes CAA Administrator.

by W. W. R.

As government administration goes, the industry is getting a break in that all three of these men have good sound aviation backgrounds. The new line-up means harmony between Commerce and CAB and CAA. There will be more cooperation and coordination than ever before. Fast and expert administrative action is in the cards. The R-N Team is on its way.

On the debit side is the fact that there have been so many changes especially in the CAB that a continuity of policy is lacking. Nyrop is a good man but the chairmanship of CAB is a job to strain the capabilities of even more experienced men. At 38 Nyrop is a comer. He didn't want the chairmanship; he fought to remain in CAA. No one questions his integrity and his willingness to give conscientiously of his best. The chances favor his making good—but the road isn't easy.

The new CAA Administrator, Charles F. Horne, has been on leave from the Navy as acting director of Federal Airways. He is resigning his commission as captain to accept the new civilian post. Largely unknown to the industry at large, Horne is an able administrator and protégé of the Rentzel-Nyrop team. There is no basic reason why he won't make good even though many old-timers may wish that CAA could be headed up by "one of their own."

As Under Secretary of Commerce, Del Rentzel will be undertaking many broad policy matters affecting all transportation in the country. Aviation is just one of his many responsibilities. But no one

(*Turn to Page 6*)

**Continental's New Vice Presidents**

Lynn H. Dennis, left, Continental Air Lines' director of flight service, has been elected vice president-flight service of the company, and Stanley O. Halberg, right, general traffic and sales manager, was elected vice president-sales. Dennis, who has been in the industry 15 years, was with Capital and Northeast before joining Continental. Halberg, a 20-year veteran, joined Continental after working with United Air Lines for several years.


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In this Issue


**Materials Delays**—*Plane Production Threatened by High Prices, Slow Deliveries* ..9

**New Allison Jet**—*High-Thrust Engine to Power Four-Engined Boeing B-47C* ..

**Radar Control** *Selected* ..



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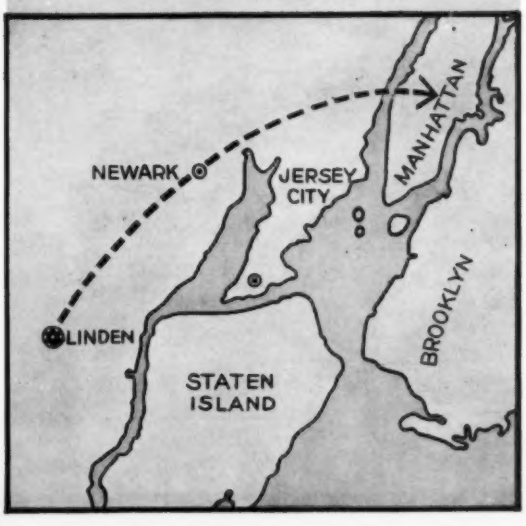


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American Aviation

THE INDUSTRY'S FIRST NEWS MAGAZINE

NEWS SECTION

Volume 14 Number 37

April 2, 1951

## a LOOK at the WEEK

Railroad-minded officials in National Production Authority's transportation equipment division, which has aircraft section under it, started campaign recently to throw out priorities for transport aircraft. Move has been stymied, however.

•

*Aircraft manufacturers, faced with serious shortage of electronics engineers, are considering importing foreign help. One company is exploring possibility of importing about 40 Swiss under special immigration quota to handle precision electronics work for guided missiles.*

•

Survey of most of aircraft manufacturing industry shows about 10% of personnel are in military reserves.

•

*Deadline for entries in Air Force's design competition for air freighter with 25,000-lb. payload will be some time this month. Plane, incidentally, is to have cargo floor 45 inches from ground and will be pressurized.*

•

New, tougher government policy on issuance of tax amortization certificates covering construction of plants used in defense program is reported under consideration.

•

*The 90-day interim priority program under which personal and executive planes would be built at annual rate of 2,500 hasn't even started yet, although Air Coordinating Committee recommended it in February. Reason: National Production Authority decided that Defense Production Administration must approve, and this approval hasn't been given yet. Meanwhile, manufacturers are getting "spot" priority assistance.*

•

Discount recent rumors that military was moving to scuttle RTCA's common system of air navigation and traffic control. Military insists it must have tactical navigation system for use at times when U. S. is threatened by bombing, when most aids might be turned off. It will get such a system, but there'll also be a common system.

•

*CAA is preparing new set of standards for use in determining what visual and electronic aids will be installed at specific airports in future. It will cover instrument landing systems, GCA, etc. Significance is that standards will have Budget Bureau approval as sound basis for justifying appropriations.*

## Aircraft Production Board Coming

Two moves to give aircraft production higher status in the defense program are expected to be formally announced soon:

• **Establishment of an Aircraft Production Board** under the Defense Production Administration.

• **Upgrading of National Production Authority's aircraft section** to division status.

The Aircraft Production Board, which will be concerned largely with policy making and programming of aircraft production, is expected to include members from Air Force, Navy, Army, DPA and NPA. Whether there will be industry representation has not been determined.

The handling of aviation matters by NPA's present aircraft section has brought outspoken criticism from the industry. The low-level representation, with the section buried under the NPA transportation equipment division, has been ineffective, observers say.

With establishment of an APB, upgrading of the NPA section is a necessity inasmuch as it will be the operating agency to carry out the APB policies. Some difficulty has been encountered in selecting a chief for the division, and it is understood that this has held up formal announcement.

## No Deals by Northwest

In view of industry-wide rumors about Northwest Airlines, which have increased following recent grounding of the company's Martin 2-0-2 fleet for modification, AMERICAN AVIATION has learned the following regarding NWA's status and plans:

**Mergers, Interchanges:** No negotiations of any kind are under way or contemplated by NWA management, although there have been informal discussions with other airlines (none initiated by NWA). Same holds true for equipment. At least one other carrier has proposed certain exchanges of four-engined planes. No deal is being considered by NWA, however.

**Equipment Plans:** NWA presently plans to keep fleet of Boeing Stratocruisers, DC-4's and 2-0-2's. Modification of first two Martins will require six to eight weeks, after which about two a week will be completed. Martin service will be restored gradually. About 80 NWA pilots are now going through pilot training school conducted by company with close CAA coordination. NWA still feels 2-0-2 is best plane of its class available.

**Financial Condition:** Despite accidents and two 2-0-2 groundings, NWA's basic financial condition is sounder now than a year ago. Bank loans have been reduced 25%. Management seems to have confidence that it will pull through present situation.

**Organizational Changes:** Further organizational changes are being made in a number of departments, including traffic. CAB and CAA, which have been working closely with NWA, apparently feel confident that company, with further strengthening of operational and maintenance personnel and procedures, will come through.

**Change in Control:** Management will fight any attempt by a new group seeking to get control of NWA through stock purchases. So far there's no tangible evidence of any such effort being made, although there have been some rumors, inevitable under the circumstances, to that effect afloat in New York.

## Guide to Army Procurement

Disclosure by Army ordnance officials that 25% of the Army's aviation parts and supplies are being purchased through local procurement has raised the possibility that dealers and distributors may have been overlooking a substantial source of business and that the Army lacks pertinent information on available supplies.

Army officials have disclosed that:

**Army is authorized to buy** aviation parts and supplies whenever depot stocks or Air Force warehouses cannot supply requested materials.

**Emergency procurement is authorized** for pilots stranded by breakdown or by damaged aircraft.

**Payment for parts and supplies** obtained locally has been stepped up to the point that a month or less is required in most cases, contrasted to the three months to a year in the last war.

These same officials, however, have asserted that the following information would be desirable:

**A list of parts and supplies available** from dealers and distributors.

**Whether there are discounts** on volume orders.

**Forwarding to nearest Army depot of information** on available parts for Army's most widely used planes—Ryan Navion, Cessna, Aeronca and Bell H-13 helicopter. Purchases for these planes have included engines, propellers, wing sections, and spray and dusting modification supplies.

Information of interest to dealers and distributors:

**For payment of emergency purchase items,** headquarters of Army area should be contacted (addresses available from nearest Army facility).

**To rent planes to Army,** operators should contact Chief, Army Field Forces, Ft. Monroe, Va. ATT: G-3 Air. Army's plans for renting will be furnished to bona fide inquirers. Personal and executive type planes have been rented in substantial numbers in the past when needed in reserve maneuvers and training operations.

**Funds for local purchases** have been set aside at depots in each of six Army areas. Depots are: Army Area 1, Seneca-Grazier Ordnance District Depot, Romulus, N. Y.; Area 2, Letterkenny Ordnance District Depot, Chambersburg, Pa.; Area 3, Anniston Ordnance District Depot, Anniston, Ala.; Area 4, Red River Arsenal Ordnance District Depot, Texarkana, Texas; Area 5, Rossford Ordnance District Depot, Toledo, Ohio; Area 6, Benicia Ordnance District Depot, Calif., and Mt. Ranier Ordnance District Depot, Washington.

## ANDB Funds Cut by $7.5 Million

Air Navigation and Development Board, the agency set up to do research on the long-range common system of air navigation and traffic control, is to have its already-appropriated $8,000,000 fiscal 1951 funds cut more than one third to about $5,000,000.

Its fiscal 1952 budget, which has been projected at above $8,000,000, will be reduced to about $3,500,000. Both cuts are by agreement between Defense and Commerce Departments, the two agencies which established ANDB.

Reason for the reductions is to free developmental facilities which would normally handle the ANDB work for research of a more critical military nature. Many of the projects in the long-range program aimed primarily toward the ultimate system scheduled for completion in 1963 will be indefinitely delayed.

## MANUFACTURERS

**Bell Helicopter Plant:** Bell Aircraft Corp. will build a $3,000,000 helicopter engineering and manufacturing plant in Ft. Worth, Tex. Company has purchased a 55-acre tract for the plant site, and engineering and architectural contracts have been awarded.

**New Helicopter Ordered:** Two experimental models of the McCulloch MC-4 helicopter, developed by McCulloch Motors Corp., Los Angeles, have been ordered by the Navy. A two-place tandem rotor model with gross weight of 1,800 lbs., plane is powered by a Franklin 165-hp engine mounted horizontally. Operating speed is 85 mph. MC-4 was originally planned as a $15,000 commercial craft, and company is going ahead with CAA certification. However, increased costs will probably put final commercial price over $18,000. Company has formed separate helicopter division, to be headed by **Russell E. Gage,** former vice president and general manager of Globe Corp's aircraft division.

**UAC Projects:** A production order for a "substantial number" of its new 10,000 pound thrust J-57 jet engine is now being processed, according to the annual report of United Aircraft Corp. Engine is already being flight-tested, with converted Boeing B-50 being used as test bed. Annual report also revealed: (1) Pratt & Whitney will construct new facilities near East Hartford for quantity production of J-57 and turbo-prop T-34. (2) Hamilton Standard, under Air Force and Navy sponsorship, is designing two types of supersonic propellers which will extend upper speed range for propeller-driven aircraft to 700-mph bracket, (3) Chance Vought has received another contract for F4U Corsairs, only piston-engined fighter-bomber still in production, (4) Chance Vought is in "limited production for experimental use" of guided missiles which have been flown.

**Hiller Contract:** New contracts for construction of large quantity of military-designed H-23 air evacuation type and HTE Navy training helicopters have been received by Hiller Helicopters, Palo Alto, Calif., Company's current backlog is four and a half times that of December, 1950. New H-23's will feature high performance and will carry two litter patients besides the pilots. Hiller is now completely converted to AF and Navy production, a government pilot and mechanic program and a Navy jet power plant research contract. Company is doubling facilities and tripling working force.

**Republic's Half Billion Backlog:** Republic Aviation Corp.'s backlog for F-84E and F-84F jet fighters has topped the half billion dollar mark (see Financial).

**Helicopter Facility:** New facility at Falcon Field, Mesa, Ariz., will be opened within 30 days by American Helicopter Co., of Manhattan Beach, Calif. Testing operations for pulse jet helicopter engines will begin at that time.

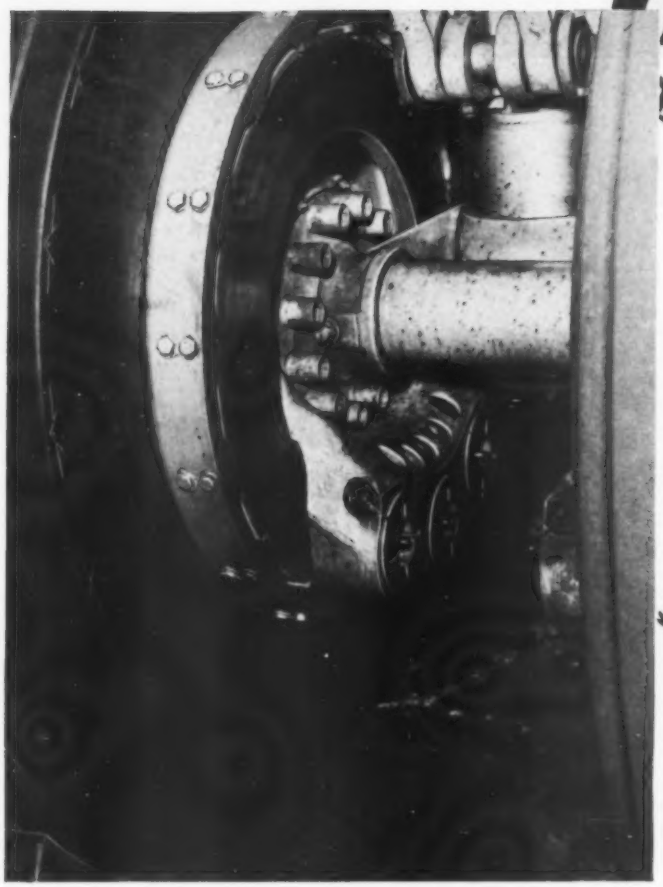
**People:** **Harry F. Cross** has been named production manager of Consolidated Vultee Aircraft Corp.'s new guided missile division . . . **John H. Tacke,** who has been Kaiser-Frazer Corp.'s works manager at Willow Run, was appointed operations manager in charge of auto and military aircraft production.

## PLANES & EQUIPMENT

**Regent Rocket:** The Regent Rocket 260, an all-metal five-passenger tricycle-geared monoplane with speed of 260 mph, has been completed by Regent Aircraft Corp., Henderson, Tex. Ground tests will be conducted at Rusk County Airport and plane is expected to fly in April.

**C-119 Arctic Tests:** Suitability tests under extremely low Arctic temperatures have been successfully completed by Fairchild C-119 Packet. Plane was tested at Ladd AFB, Fairbanks, Alaska, as cargo carrier, troop transport, resupply plane and evacuation ship.

(Continued opposite page 50)



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# American Aviation

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## contents


**Materials Delays Threaten Plane Production**
*High Prices, Slow Deliveries Hit Mobilization Program* 9

**Allison Unveils -23 Model of J-35**
*Power Plant for B-47C Has over 8,000 Lbs. Thrust* ..... 10

**Washington Gets First Radar Control Unit**
*Operation Expected by Summer* ..... 11

**CAB Drops National Airlines Dismemberment Proposal**
*Carrier's Financial Recovery Cited* ..... 12

**Airline Earnings Improve Investment Outlook**
*Current Holdings in Domestic Airlines Total $383 million* 14

**Integrally Stiffened Wings in Super Connie**
*First Application in Transport Aircraft* ..... 19

**Airline Pilots Speak Up on Cockpit Visibility**
*Influence on Safety During Takeoffs and Landings* .... 23

**World-Wide Air Coach Services Coming?**
*CAB Opens Door for Reduced-Fare Atlantic Schedules* .. 33

**Growing Detroit-Wayne Major**
*Candidate for Motor City's Primary Commercial Airport* 38

**Insect Control Skills Needed Under Point IV Aid Program**
*Training Role for Agricultural Aviation* ..... 41


## departments


| | | | |
|---|---|---|---|
| Airline Commentary | 36 | In Flight | 49 |
| Airports | 38 | Index to Advertisers | 44 |
| Between the Lines | 16 | Letters | 46 |
| Boedy's Album | 47 | Local Operations | 41 |
| Calendar | 13 | New Products | 31 |
| Cross-Country | 45 | Operations & Maintenance | 23 |
| Design-Engineering | 19 | Over the Counter | 34 |
| Design Trends | 20 | Production Spotlight | 17 |
| En Route | 50 | Traffic & Sales | 33 |
| Extra Section | 30 | Wings of Yesterday | 46 |


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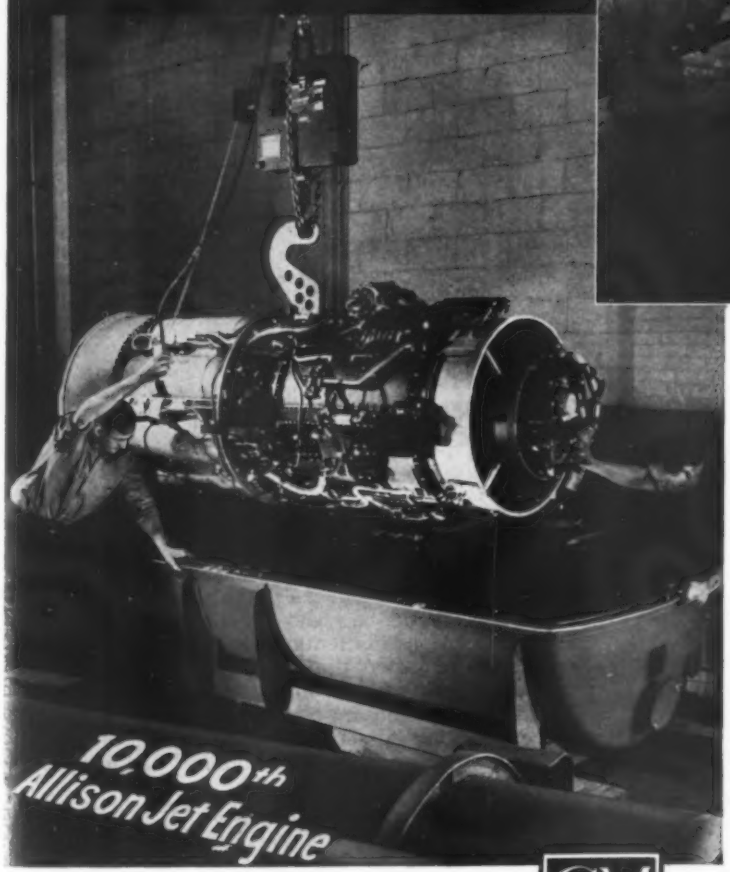
# Allison delivers its 10,000th Jet Engine




JUST six years to the month after start of production, Allison delivered its 10,000th jet engine to the U.S. Air Force.

Built largely during a period of peacetime activity, these 10,000 engines plot a curve of increasing power and dependability. *Thrust* was stepped up more than 50 per cent per pound of weight; *service life* was extended more than 300 per cent and important improvements were made in *fuel economy*.

These vastly improved engines were in Japan ready for duty at the outbreak of the Korean hostilities. Today, two types of Allison jet engines in three types of U. S. jet fighters are in combat in Korea—spreading destruction among enemy air and ground forces with a degree of availability and reliability never before equaled.

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doubts that it will be Rentzel who will be calling the shots on all major aviation issues. Rentzel has risen high in government circles but has demonstrated a rather amazing ability to retain a grasp of a multitude of details on everything from airports and communications to broad policy matters.

The CAB will remain intact—and independent. But with a brand new chairman and two brand new members, independence is a relative matter. In actual fact the CAB is now more subject to the executive branch of government than ever before. Of the new members ex-Senator Chan Gurney, a liberal Republican from South Dakota, looks to be a strong man. Oswald Ryan, vice chairman and the only original CAB member still on the job, will continue to be a strong wheel. Criticism of Ryan has declined markedly since last summer.

It is a new kind of board—a board more likely to expedite than to procrastinate. It is more likely to administrate and execute than to deliberate. The new members—Nyrop, Gurney and Joseph Adams—have a lot to learn and a lot to do to restore the morale of employes shaken by uncertainties arising from the many changes of the past year.

On the whole it isn't a bad set-up for these times, even though conservative members of the industry are likely to fear a break-down of judicial approach to major problems and mourn the lack of regulatory background and experience among the new CAB members. But for the next stretch down the airway the streamlined Commerce-CAB-CAA unification should make for action. It ought to work.

## Finis to Dismemberment

BACK IN September, 1948, the CAB threw a bombshell into the airline industry by issuing an order that threatened to carve up National Airlines and parcel it out to the waiting wolves. Although the CAB action was actually trying to be constructive in remedying what it thought were current ills in the airline system, the order created a great stir in the industry, in financial circles, and along National's routes.

After long and tedious hearings, the filing of endless briefs and countless trips by witnesses to Washington, the "lawyers' paradise" has been dismissed formally by CAB. National's route certificate is no longer in jeopardy. It never should have been in the first place.

Instead of trying to transfer all or part of National's routes to other carriers, CAB has now placed this airline in a key role in a much bigger case which bids fair to become the biggest proceeding in CAB history. This is the highly controversial and competitive route area extending from New York south to Buenos Aires involving National, Pan American, Panagra, Eastern, Braniff and Delta.

Few proceedings have been so complex as this one. The stakes are high. All air traffic between New York and Miami, between New York and the entire Caribbean, and between the U. S. and all of South America, is involved. It is ironical that the No. 1 dismemberment case undertaken by CAB three years ago should wind up in a proceeding in which the traffic potential and traffic rights are so valuable that they will be fought over desperately by many companies. There are no skeletons now—there is plenty of meat on the bones.

## Narrow Squeak

THE NATION'S two helicopter air mail services were seriously threatened for a short time in Congress the other day but as usual a few stalwart aviation friends led by Representative Carl Hinshaw of California came to the rescue.

A very small group of Congressmen attempted to use a legislative trick to write a restriction into the law which could well have meant the end of helicopter mail service, at least for a while. This small group had attached a rider to the P. O. appropriations bill which stated that no P. O. funds "shall hereafter be used for the transportation of mail over any route or by any means which the Postmaster General determines to be more costly than other available and equally satisfactory routes and means."

Mr. Hinshaw and others eliminated this rider from the main bill during House debate. But the incident served to show how worthy aviation enterprises have to be on the alert constantly. The small group of Congressmen who seemed determined to turn back the suburban air mail service to trucking interests were wholly ignorant of what Los Angeles Airways and Helicopter Air Service of Chicago have meant in the development of the versatile machine which has played such an important life-saving role in Korea. These two helicopter services are practical laboratories paying off dividends far in excess of their relatively small cost. Thanks to Mr. Hinshaw and other informed friends, they'll continue to do a good job.

## Harold Jones

THE "great dissenter" in the CAB deserves a pat on the back. Harold Jones, Republican attorney from San Francisco, who resigned from the CAB recently, was a conscientious and constructive public servant. He joined the CAB with a deep sense of humility and stewardship and his opinions were reached with genuine sincerity. Most noteworthy were his long dissents in the local service route cases—Jones could not be convinced of the justification for feeders.

But even though he opposed the local service lines, no one could accuse Harold Jones of insincerity in his opposition. Integrity such as his isn't found everywhere in Washington. So when he resigned the other day it was refreshing in the American way to find many local service operators paying tribute to their honest opponent. We disagreed with Jones, too, in some of his conclusions, but we add our tribute to the many he has received. The government needs more men of his caliber and sincerity. He couldn't be bought or influenced. He is made of the stuff that this country could stand more of these days.

WAYNE W. PARRISH

To Every Management Engaged in Defense Production

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## How to keep a fighter from blowing its top

THE NORTH AMERICAN F-86 "Sabre" has a pressurized canopy, with a rubber seal between the canopy top and the fuselage. High altitudes used to raise hob with this inflatable seal. Under the severe effects of high pressure on the inside, low pressure on the outside, it blew out.

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ESTABLISHED JUNE 1, 1937 American Aviation VOLUME 14 NUMBER 37

# Materials Delay Threatens Plane Production

## . . . High Prices, Slow Deliveries Hit Mobilization Program

By James J. Haggerty, Jr.

THE DEFENSE mobilization program is slowly getting up steam, but two very important items threaten to give it some trouble. **One,** continually rising costs of raw materials and components threaten to make the cost of continuing the program at its present rate prohibitive in the coming fiscal year. **Two,** slow delivery schedules on raw materials, parts and components may cause the whole program to bog down. This is the opinion of Aircraft Industries Association's Industry Planning Service.

The extremely slow delivery schedules for raw materials, parts and components is posing a real problem in production planning for the aircraft industry. Normally the industry relies upon warehouses to supply most of the many raw materials that go into planes. But increased demand for these materials at the outbreak of the Korean war caused a sharp depletion of warehouse stocks as the warehouses rapidly used up their reserves to meet the immediate need.

It was not until four months after the war started that a system of priorities was initiated and by that time warehouse inventories of raw materials were at a dangerous low. Such basic items as aluminum, magnesium, steel and copper have reached such a low that it is now impossible to replenish the inventories under present procedures.

### Warehouses Need Priority

Industry Planning Service warns that, if the defense planners expect to meet the currently visualized aircraft production schedules, some method of giving the warehouses priority assistance to enable them to replenish their stocks will have to be devised.

Steel and aluminum are two of the most critical raw materials. Steel mills will no longer guarantee delivery for any particular month, while as early as mid-December of last year the three major aluminum producers had closed their schedules on DO rated orders through April of this year. The percentage of output of steel and aluminum allocated by the National Production Authority for defense production is totally inadequate for the needs of the aircraft industry, IPS says, and immediate action toward increasing these allocations must be taken if current production schedules are to be maintained.

In the component field, no solution is yet in sight for the slow delivery problem. For instance, delivery times for radio tubes for aircraft and guided missiles are quoted at a minimum of 26 weeks, but most are scheduled "indefinitely," even on DO rated orders. Practically all electrical items are coming into that category and IPS believes that an extensive allocation system will be required soon.

### Repair Parts Tight

Materials for ordinary maintenance, repair and operation present another problem, due to lack of adequate priorities. Laboratory and test equipment, essential to the production of a large number of aeronautical items, also needs priority assistance.

Another factor contributing to slow deliveries is the time required to process DO ratings for production equipment. Serious delays in getting the mobilization program rolling have been caused by the extreme time lags in the processing of DO ratings for such items as machine tools, dies and jigs.

Costs of raw materials, parts and components are still going up at an alarming rate and if the spiral continues, as it appears it will, an upward revision of the already staggering $60-billion defense budget for fiscal 1952 will undoubtedly be required.

### Steel Leads Spiral

A round of price increases running through the entire list of raw materials, parts and components used in the aircraft industry started about December 1. It was brought on by an increase in the base price of steel and various announcements made by the Economic Stabilization Agency regarding price controls.

The price of some raw materials has gone up as much as 100%; chrome moly shapes, for instance, now cost just 100% more than they did on July 1 of last year. Alcohol is up 90%. A number of items have increased from 50 to 55%, while the average increase on IPS list of about 100 basic raw materials is about 20%.

Aircraft and engine parts prices have increased at a rate comparable to raw materials; the average on IPS list of about 200 parts is just under 20%. But some items now cost as much as triple what they did on July 1, 1950. Some examples: decals, up 205%; rings, 100%; manifold pressure gauges, 75%; copper covered gaskets, 74%.

### What's Happening to Prices and Deliveries

| | % Price Increase Since July 1, 1950 | Delivery Time July, 1950 (Weeks) | Delivery Time Now (Weeks) |
|---|---|---|---|
| Landing Gear Motors | 5 | 12 | 20 |
| Aluminum Forgings | 5-15 | 28 | 34 |
| Ball Bearings | 5-15 | 24 | 28 |
| Aluminum Castings | 5-45 | 8 | 16 |
| Electric Switches | 3-31 | 20 | 32 |
| Instruments | 3-30 | 13 | Indefinite |
| Aluminum | 5-45 | 13 | 26 |
| Alloy Steel Forgings | 3-15 | 24 | 30 |
| Temperature Controls | 10 | 24 | 30 |
| AN Rivets | 10-15 | 8 | 16 |
| Natural Rubber | 15-20 | 6 | 10 |
| Sponge Rubber | 33 | 4 | 8 |
| Aluminum Sheet | 10-15 | 12 | 16 |
| Aluminum Extrusions | 10-50 | 14 | 16 |
| Bearings | 5-15 | 8 | 16 |

**OVER 8,000 POUNDS OF THRUST:**

# Allison Unveils -23 Model Of J-35; To Power B-47C

JET ENGINE power continues to go up on a rapidly rising curve. Engineers are predicting engines of 15,000-20,000 pounds thrust within the next few years and power plants in the 10,000-12,000-pound category are already running on test stands. But more important, engines with basic thrust ratings of 7,000-8,500 pounds are now going into production, and will be available for installation in new aircraft as early as the fall of this year.

The newest engine in the latter class is the Allison J-35-A-23, recently unveiled in a press showing at Allison Division's Indianapolis, Ind., plant. The -23, as it is known to the company's engineers, will be the power plant for Boeing Airplane Co.'s hot, new B-47C, four-engine version of the Stratojet now in production.

The exact thrust rating of the -23 was not disclosed, but official statements to the effect that the four engines in the B-47C will turn out "a great deal more power" than the six engines in the earlier B-47's indicated that the basic trust rating of the new engine is well over 8,000 pounds, while afterburning will bring the available power up to the neighborhood of 10,000 pounds. Allison termed the engine the most powerful to reach the production stage and also the production engine with the lowest specific fuel consumption.

Although the engine carries the basic designation "J-35," the -23 indicating a modification of the basic type, it is actually a new engine from the standpoint of its innards, not just a new version of the J-35 which powers such planes as the USAF's Republic F-84 jet fighter.

## 16 Compressor Stages

Where the old J-35 had 11 compressor stages and a single-stage turbine, the -23 has 16 compressor stages and a three-stage turbine. For this reason the -23 is considerably longer than its predecessor—172 inches compared with 146 inches in the earlier versions. However, despite the greatly increased power, Allison engineers were able to retain the maximum diameter of the earlier J-35's—37 inches.

The -23 features a new type combustion section, termed by Allison a "cannular" chamber. This refers to the fact that the outer combustion chamber is a single can similar to the annular-type burner section, but there are 10 individual inner cans within the outer can. Compressed air flows from the outer can into the inner liners for combustion. The advantages of this type of construction, Allison says, are greater engine structural strength, higher combustion efficiency and greater ease of assembly.

## Better Fuel Consumption

The specific fuel consumption figure was not disclosed, but it was described as 20% better than the early J-35 engine, the lower consumption rate having been obtained through "considerably higher" compression ratios. The increased engine performance is due to more efficient cooling as well as the mechanical improvements.

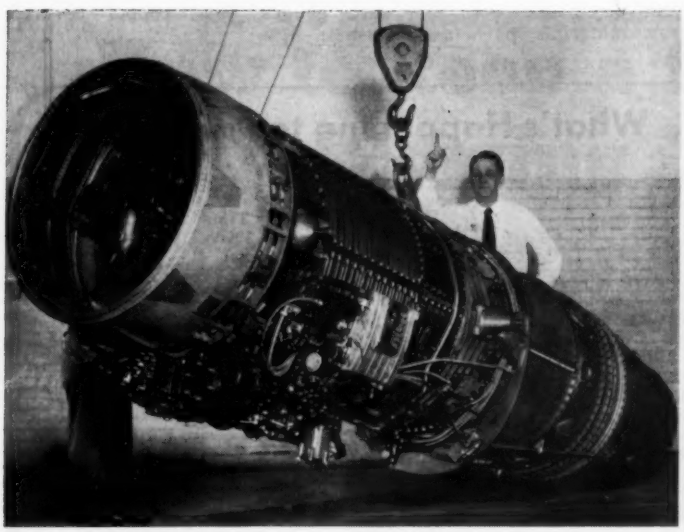
Although officially Allison can only state that the -23 engine will power the experimental model of the B-47C, it is obvious that the engine is slated for wide service use, since the Air Force has ordered it in such quantities that Allison's brother company, Chevrolet Division of General Motors Corp., will also produce it in a plant at Tonawanda, N. Y.

Allison, which now has 13,000 employes and 4,243,834 square feet of floor space, is turning out four turbine-type engines—the early J-33, still used in Lockheed F-80's and Grumman F9F shipboard fighters, the early J-35, the J-35-A-23, and the T-40 turboprop engine.

## Non-Aviation Jobs

In addition, the company is doing some non-aviation work, including production of heavy-duty bearings for Continental engines used in Army tanks, diesel locomotive parts and heavy tank transmissions. Some of the bearing production is also diverted to Wright Aeronautical Corp. and Pratt & Whitney Aircraft for use in piston engines.

Backlog of Allison-designed defense products, some of which will be built by other General Motors divisions, is over $1,500,000,000.



MOST POWERFUL jet engine to reach the production stage, the Allison J-35-A-23. At left, a good view of the engine's accessory mounting. At right is a good comparison of the new engine with its predecessor, the J-35-A-17. Major difference is the length—an extra 26 inches on the new engine, because it has five more compressor stages and two more turbine stages.

OPERATION TO START THIS SUMMER:

# Washington Gets First Radar Control Unit

By WILLIAM D. PERREAULT

RADAR has been chosen as the primary traffic control aid and Washington, D. C., has been selected as the site for the first full-scale radar control center. Work on this center, to be located at Washington National Airport, is now under way under the direction of Bert Moore, CAA's chief of Air Route Traffic Control Centers. Plans now call for having this radar center in operation sometime this summer.

Radar has been used for surveillance of the airport area and for precision approaches by the U. S. Air Force, Navy and civil operators for some time. The importance of the Washington National installation is the manner in which radar will be used to control en route and terminal area traffic and the degree to which other aids and procedures will be used to best serve the needs of the radar traffic controller.

Principal effect will probably be a reduction in the intervals between successive landings during traffic peaks and a vast reduction in the oral communications required to handle a flight. These reductions are not academic. They have actually been proved during trial operations in which jet fighters, small and large transports and private aircraft used the same type of equipment at Wright-Patterson AFB to determine the validity of the proposed plan.

## Close Landing Intervals

During these tests, sponsored jointly by the agencies represented in the Special Working Group 5 of the Air Coordinating Committee which drew up the now accepted report "Air Navigation and the National Security," much was learned. On the second day of the tests 65 runs were made in the morning and 56 in the afternoon. Average interval between landings was 1.77 minutes in the morning, 1.98 minutes in the afternoon. Minimum intervals were down to .3 minutes and .7 minutes respectively.

The next day with 68 morning and 59 afternoon runs the average intervals were 2 minutes and 1.7 minutes with minimums for both session .6 minutes. These intervals are substantially below the 3 minutes now considered operationally good with routine control procedures and should do much to eliminate the stacking of aircraft in the terminal area.

Not many terminal areas will support a full-scale radar center of the type planned for Washington, probably 10 to 12 high-density traffic areas in this country. Fortunately the program is such that portions of the center can be installed successively to handle growing traffic volumes.

## To Use AF Units

ACC's report recommended (AMERICAN AVIATION, Dec. 25) that civil traffic controllers make use of the military early warning (long-range) radar in certain instances. This is the first step being taken at WNA. The USAF's long-range radar, now used to route military traffic around Washington National to Andrews Field and beyond, will soon be turned over to CAA controllers. These men will reroute military traffic as required and also monitor civil traffic movements within the 70-mile area of the terminal.

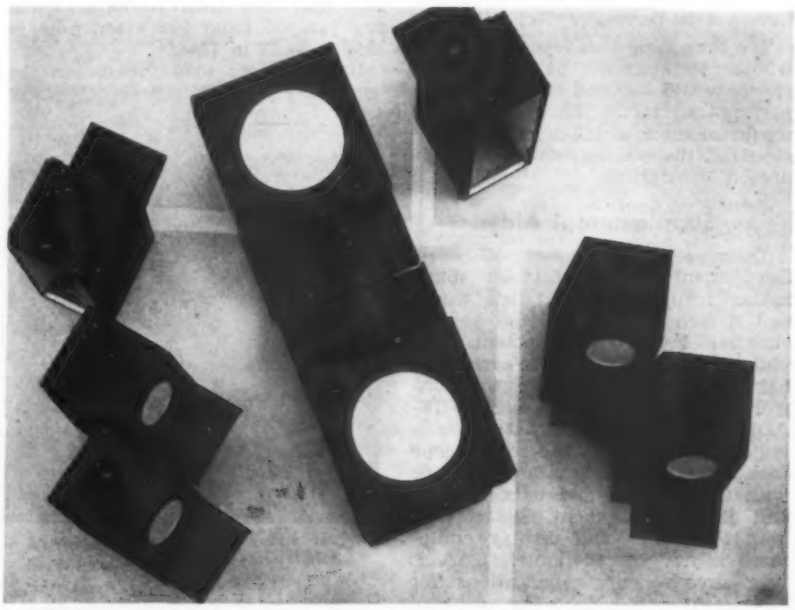
This long-range radar is the principal contribution of the USAF to the immediate program for rapid completion of the initial radar control center. CAA and the USAF are now reworking the coaxial cables between the radar antenna and control tower to make it more suitable for the new program.

Meanwhile, the U. S. Navy has made its major contribution to the equipment side of the program: two VG-2 Skiatron units. The Skiatron units are "king-size" radar repeater scopes which simplify the task of tracking aircraft in the congested terminal area. These scopes are about 24 inches in diameter contrasted with 12 inches for the regular radar scope. Furthermore, the Skiatron tubes are mounted vertically providing a horizontal scope surface on which identity markings can be placed while tracking aircraft.

## Reducing Skiatron Size

The Skiatron units are being modified physically to reduce their length from about 80 inches to 50 inches and to gear scope operation to the high rpm of the airport surveillance radar.

In operation there will be six regular approach-control radar scopes, two Skiatron units and two departure-control scopes in the control center. Tentatively these would be arranged as shown in the accompanying photo with the six repeater scopes closely grouped around the two larger Skiatron scopes. The four individual scopes would each be manned by a separate controller and handle one of the four quadrants. All four



**AS PRESENTLY planned, this is the way the radar equipment will be arranged at Washington National Airport. This mock-up, by-product of the personal initiative of CAA's Cliff Barberow, shows the two large Skiatron horizontal scopes in the center, the smaller individual scopes for each of the four terminal-area quadrants arranged near the Skiatrons and, in the rear, two scopes for monitoring departing aircraft. CAA is handling the equipment program with the USAF providing long-range radar units and the Navy providing the Skiatron.**

scopes would give the same identical presentation but the controller would only be responsible for the airplanes in his designated quadrant.

As a plane entered this quadrant the controller would talk with the pilot, get flight plan details, identification, altitude, estimated time of arrival, etc. Pertinent information would be recorded on the manual plotting boards now in use, since these would not be abandoned during the first months of operation with the radar center.

### Identification Markers

Certain data would also be entered on a small tear-shaped plastic marker by the controller. Meanwhile one of the large Skiatron scopes, manned by one controller and one assistant, is also tracking all aircraft picked up by the long-range radar. As the planes enter the designated area they are transferred from the small repeater scopes to the watchful eye of the Skiatron controller. The plastic identification marker is placed on the horizontal face of the scope with the point toward the aircraft "pip" showing its location and direction.

Later, as this plane enters the heart of the terminal area, the Skiatron controller whose scope reflects the picture as shown by the long-range radar, transfers the identification marker and responsibility for the approaching plane to the other Skiatron operator showing the data picked up by the airport surveillance radar. Exact mileage limits at which these functions will be transferred have yet to be finally decided.

The remaining two repeater scopes, whose faces can not be seen in the photo, would be used to monitor departing aircraft. Each controller would monitor a 180-degree arc instead of the 90 degrees of the approach controllers.

### Supplemental Aids

These are the major pieces of radar. Supplementing these units and eliminating many of the written words and spoken messages, would be mechanical interlock equipment providing for mechanical clearing of holding altitudes between the control center and control towers; VHF-ADF's (yet to be procured) providing tracer marks on the radar scope each time a radio contact is made with an airplane, and data transfer and display equipment.

Data transfer and display equipment is not yet available. CAA is now drawing up specifications for equipment based on a bread-board model used during the Wright-Patterson tests. Actually DTDE provides semi-automatic symbolic displays to transfer flight plan data to successive locations as the flight progresses. Pertinent data (identification, altitude, speed, route, destination, etc.) is manually introduced into the equipment but from then on display and transfer no longer requires the extensive controller time now devoted to this effort.

Since communications delays represent a major factor in busy terminal areas each of these related reductions in communications should help reduce landing intervals. These will combine with the closer lateral aircraft spacing made possible by positive radar control (altitude separation will still be used) and increased vectoring of aircraft to provide greater safety and regularity.

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**FINANCIAL RECOVERY CITED:**

# CAB Drops National Airlines Dismemberment Proposal

THE Civil Aeronautics Board has abandoned its proposed dismemberment of National Airlines.

In recognition of National's substantially improved financial position today compared with that of 1948 when the dismemberment proceeding was started, CAB concluded that the public interest does not now require a transfer of the whole or any part of the routes of National to any other carrier or carriers.

It was in September, 1948, when the Board startled the airline industry by proposing to divide the National system among Pan American, Eastern, and Delta. In that year, severe labor strikes and the grounding of National's DC-6 aircraft, contributed substantially to a $1½ million operating loss. National's mail pay jumped from 50c a ton-mile in 1947 to $4.02 in 1948.

Its passenger load factors on the heavy New York-Miami segment dropped from 54% of capacity in 1947 to 36% in 1948. In general, it was a bad year for the line—so bad that CAB decided an investigation was necessary with dismemberment a possible solution.

### NAL Rebounds

But while the Board's investigation and related procedural steps went on, National rebounded. From that $1½ million net loss in '48 it came back to show a net profit in domestic operations in 1949 of $52,655. Last year, it did fifty times better with a net operating income domestically of $2½ million.

During that period, National became one of the leading air coach operators in the country and, with Eastern and Delta, developed year-round business to and from Florida with promotional programs that encouraged travel during off-season months.

Looking at the picture now, CAB says "the record establishes that National has held its own since relieved of the causes leading to its bad performance in 1948, and an analysis of National's overall performance . . . leads to the conclusion that National should continue to do as well as any other carrier in its class."

"As a matter of fact," CAB added, "National's most recent figures tend to show that continued performance for future periods may well result in its becoming self-sufficient."

The dismemberment proceeding widened in scope during the 2½ years of its existence, however, and actually developed into a highly-controversial interchange case when it became apparent that National was no longer on the ropes.

### Other Actions

Thus, to clear the way for the impending battle for interchange rights, CAB took the following actions simultaneously with its abandonment of the dismemberment issues:

- It dismissed a pending National-

**Ceremony—** Robert Ramspeck, executive vice president of the Air Transport Association, being sworn in as chairman of the U. S. Civil Service Commission by Chief Justice Fred M. Vinson on March 16. Mrs. Ramspeck looks on as her husband is inducted into the new post which he accepted at the request of President Truman. He is on a 15-month leave of absence from ATA.

Rentzel

Nyrop

Horne

## Key Figures in U. S. Civil Aviation

Control of all phases of civil aviation in this country now rests largely with the three men pictured above: Delos W. Rentzel (left), Undersecretary of Commerce for Transportation; Donald W. Nyrop (center), who followed Rentzel as Civil Aeronautics Administrator and has now succeeded to the latter's more recent post as chairman of the Civil Aeronautics Board; and Charles F. Horne (right), formerly director of CAA's Office of Federal Airways, who moved up into the Administrator's position (AMERICAN AVIATION, Mar. 19 and 26). Rentzel succeeds Maj. Gen. Philip B. Fleming, who was named ambassador to Costa Rica. His appointment carries with it broad new powers over the various transportation agencies in the Department of Commerce under a Presidential executive order issued February 28. Rentzel and Nyrop had been CAB chairman and CAA Administrator, respectively, only since last October, when Rentzel moved to the Board to fill the vacancy created several month earlier by the resignation of Joseph J. O'Connell, Jr. Nyrop, who had been his administrative assistant in CAA, then was named to succeed him.

Pan American interchange proposal which was no longer desired by Pan Am;

• It dismissed a pending National-Pan American stock option agreement which was no longer desired by National;

• It decided to act without further delay on a pending National-Panagra interchange proposal which, though opposed by Pan American, appears headed for temporary approval.

### New Proceeding

Then the Board ordered a new proceeding opened which will be officially known as the New York-Balboa Through Service Proceeding, and which will determine on a final basis what interchanges should be operated between New York and Latin America and who should operate them. Included in this case are:

(1) A new proceeding for a compulsory National-Pan American interchange to be operated with Panagra aircraft now flown over PAA's Miami-Balboa route under a trackage agreement;

(2) A new proceeding concerning possible certification of Braniff or Eastern between Miami and Havana and a Braniff-Eastern interchange between New York and Balboa;

(3) Pending application of Pan American and Eastern for a New York-Latin America interchange service; and,

(4) Certain issues connected with the National-Panagra interchange and with the request of Pan American and Panagra for extension of their Miami-Balboa trackage agreement.

**Gurney to CAB**— Former South Dakota Senator Chan Gurney takes oath of office as new Civil Aeronautics Board Member, succeeding Harold A. Jones. A Republican, he will serve through December 31, 1952. While in the Senate, Gurney served as a member of the Armed Services and Appropriations Committees and was at one time a member of the Senate Interstate and Foreign Commerce Committee. Above, he is being sworn in by Associate Justice of Supreme Court Harold H. Burton.

## Aviation Calendar

**April 3-6**—Greater N. Y. Safety Council ann. conv. and exposition, Statler and Governor Clinton Hotels, N. Y. (Aviation session, April 6, Statler).

**April 4-6**—CAA Airports Advisory Committee, Du Pont Hotel, Wilmington, Del.

**April 16-18**—SAE aeronautic meeting and aircraft engineering display, Hotel Statler, N. Y.

**April 16-18**—American Society of Lubrication Engineers annual convention, Bellevue-Stratford Hotel, Philadelphia, Pa.

**April 19-21**—Airport Operators Council annual meeting, Hotel Peabody, Memphis.

**April 23-25**—American Assn. of Airport Executives annual meeting, Minneapolis.

**April 24-26**—Air Transport Association annual engineering and maintenance conference, Drake Hotel, Chicago.

**April 26-27**—American Helicopter Society annual forum, Washington, D. C.

**May 4**—National Handling Exposition, Int'l Amphitheater, Chicago.

**May 12-13**—Airlines Medical Directors Assn. 8th annual meeting, Hotel Shirley Savoy, Denver.

**May 13-14**—Airlines Medical Examiners Assn. 4th annual meeting, Hotel Shirley Savoy, Denver.

**May 14-16**—Aero Medical Assn. 22d annual meeting, Hotel Shirley Savoy, Denver.

**May 19-30**—Natl. Pilots Air Meet and Races, Chattanooga Mun. Apt., Chattanooga, Tenn.

**May 21-24**—Tenth Annual Conference of Society of Aeronautical Weight Engineers, Hotel Jefferson, St. Louis, Mo.

**May 23-24**—American Society for Quality Control 5th ann. convention, Hotel Cleveland, Cleveland, O.

**May 23-25**—Institute of Radio Engineers Technical Conference on airborne electronic, Biltmore Hotel, Dayton, O.

**May 24-25**—Society of the Plastics Industry annual national meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

**May 28-29**—Aeronautical Training Society annual membership meeting Mayflower Hotel, Washington, D. C.

**June 3-8**—SAE Summer Meeting, French Lick Springs Hotel, French Lick, Ind.

**June 13-16**—AWA Annual Conv., Hotel Commodore, N. Y.

**June 18-22**—American Society for Testing Materials ann. meeting, Atlantic City, N. J.

### International

**April 24**—ICAO Communications Division meeting, Montreal.

**June 5**—5th Session, Int'l Civil Aviation Organization, Montreal.

**June 15-July 1**—1951 Paris Int'l Aircraft Exhibition, Grand Palais and Paris airport.

**June 23**—1951 British National Air Races, Hatfield Aerodrome, Hartfordshire, England.

**June 26**—3rd European Mediterranean Regional Meeting, Int'l Civil Aviation Organization, location undetermined.

**June 28-30**—Institute of Navigation Annual Meeting, Hotel New Yorker, N. Y. and Kings Point, N. Y.

# Airline Earnings Improve Investment Outlook

*By* GOTCH & CRAWFORD
*Planning Consultants*

INVESTMENT in the 16 domestic trunk airlines has risen in five years from $168 million to $383 million, despite the gyrations which have characterized earnings over this period. However, more than three-quarters of the $215 million increase has taken the form of debt, debentures and preferred stock. Less than 1% of the increased investment has come from earned surplus—a source which, in earlier years, had provided substantially for capital needs.

Table I shows the capital accounts representing reported system investment and notes the amount of increase which took place between December 31, 1945 and September 30, 1950. Comparison of the percentage figures shows that paid-in equity has held at approximately 50% of the total, in each case. Earned surplus has increased only $2 million and diminished from 33% to 15% of total investment. Long term debt has increased $114 million and grown from 14% to 36% of total investment.

Considering that $166 million of the total increased investment was either debt or a preferred issue, it is evident how new capital came from banks, institutions, and similar sources which could be interested only in a secured or preferred obligation, and which were in position to become intimately informed as to risks and future prospects.

As for investment by the public, the last substantial amount of common stock was issued in 1948, and the figures in Table I reflect lost confidence of the investing public in airline equity issues which occurred and developed to a firm conviction during 1946-47-48.

## Table I

### Capital Accounts Representing Reported Investment for the 16 Trunkline Air Carriers at December 31, 1945 and at September 30, 1950 with Increases in Each Account

| | At December 31, 1945 | | At September 30, 1950 | | Increase | |
|---|---|---|---|---|---|---|
| | Amount | Percentage Distribution | Amount | Percentage Distribution | Amount | Percentage Distribution |
| Common Stock | $43,639,528 | 26.0% | $62,935,299 | 16.4% | $19,295,771 | 9.0% |
| Preferred Stock | 8,556,400 | 5.1 | 60,499,405 | 15.8 | 51,943,005 | 24.1 |
| Capital Surplus | 32,919,659 | 19.6 | 63,851,897 | 16.7 | 30,932,238 | 14.4 |
| **Total Paid-In Equity** | **85,115,587** | **50.7** | **187,286,601** | **48.9** | **102,171,914** | **47.5** |
| Earned Surplus | 55,497,632 | 33.0 | 57,516,223 | 15.0 | 2,018,591 | 0.9 |
| Surplus Reserves | 3,117,126 | 1.9 | ..... | ..... | —3,117,126 | —1.4 |
| Long-Term Debt | 24,246,631 | 14.4 | 138,266,218 | 36.1 | 114,019,587 | 53.0 |
| **Total Reported Investment** | **$167,976,976** | **100.0%** | **$383,069,042** | **100.0%** | **$215,092,066** | **100.0%** |

## Gains Less Dramatic

Unfortunately for the industry, the favorable trends which followed in 1949 and 1950 have been less dramatic and are not yet widely enough known or understood to repair earlier damage to public confidence.

As the industry emerged from the war years, with 86% of its investment in the form of equity capital, its prospective demands for additional capital exceeded 100% of the then existing investment. Wartime earnings had been favorable and six of the companies had paid cash dividends on common stock during 1943, seven in 1944, and nine in 1945.

With this for history, and with the general consensus of informed sources taking an optimistic view of the future, it was to be hoped that even a 100% increase in investment might be managed favorably.

## Post-War Problems

However, a series of accidents and fleet groundings during 1946 and 1947 damaged passenger revenues to an unknown but substantial extent. Even apart from these influences, in retrospect it is clear that forecasts of post-war passenger travel were generally over-optimistic, bringing about in 1946 a condition of over-employment and over-expansion.

Losses approximating $40 million were reported for the years 1946-47-48 as the outgrowth of these circumstances. By 1949, economy measures, reduced unit costs, increased mail revenues, and improved traffic

## Table II

### Capital Accounts Representing Reported Investment for the 16 Trunkline Air Carriers

At December 31, 1945

| Name of Carrier | Capital Stock Common No. Shares | Common Value | Preferred No. Shares | Preferred Value | Capital Surplus | Total Paid-In Equity | Earned Surplus | Surplus Reserves | Long-Term Debt | Total Reported Investment |
|---|---|---|---|---|---|---|---|---|---|---|
| American | 1,290,567 | $6,452,838 | ..... | ..... | $6,267,434 | $12,720,272 | $13,422,302 | $2,750,000 | ..... | $28,892,574 |
| Eastern | 597,160 | 597,160 | ..... | ..... | 6,167,921 | 6,765,081 | 12,284,592 | 145,000 | ..... | 19,194,673 |
| Trans World | 985,485 | 4,927,425 | ..... | ..... | 4,485,407 | 9,412,832 | 9,085,014 | ..... | $11,190,000 | 29,687,846 |
| United | 1,604,394 | 16,043,943 | 85,564 | $8,556,400 | 1,492,415 | 26,092,758 | 11,831,324 | ..... | ..... | 37,924,082 |
| Braniff | 1,000,000 | 2,500,000 | ..... | ..... | 4,075,130 | 6,575,130 | 835,955 | ..... | ..... | 7,411,085 |
| Capital | 477,060 | 477,060 | ..... | ..... | 2,812,177 | 3,289,237 | 1,345,743 | ..... | 10,000,000 | 14,634,980 |
| Chicago & Southern | 310,011 | 1,599,125 | ..... | ..... | ..... | 1,599,125 | 295,671 | ..... | ..... | 1,894,796 |
| Delta | 400,000 | 1,200,000 | ..... | ..... | 2,037,783 | 3,237,783 | 1,020,688 | ..... | ..... | 4,258,471 |
| National | 500,000 | 500,000 | ..... | ..... | 1,478,208 | 1,978,208 | 294,097 | ..... | 2,125,000 | 4,397,305 |
| Northwest | 539,170 | 7,264,512 | ..... | ..... | ..... | 7,264,512 | 2,531,108 | 50,000 | ..... | 9,845,620 |
| Western | 409,954 | 409,954 | ..... | ..... | 1,569,547 | 1,979,501 | 1,008,201 | ..... | 170,000 | 3,157,702 |
| Colonial | 274,200 | 274,200 | ..... | ..... | 301,634 | 575,834 | 189,700 | ..... | 208,333 | 973,867 |
| Continental | 271,756 | 339,695 | ..... | ..... | 235,131 | 574,826 | 1,065,534 | 50,000 | ..... | 1,690,360 |
| Inland | 164,218 | 164,218 | ..... | ..... | ..... | 164,218 | 175,631 | ..... | ..... | 339,849 |
| Mid-Continent | 389,398 | 389,398 | ..... | ..... | 498,325 | 887,723 | 408,986 | 15,000 | 433,298 | 1,745,007 |
| Northeast | 500,000 | 500,000 | ..... | ..... | 1,498,547 | 1,998,547 | —296,914 | 107,126 | 120,000 | 1,928,759 |
| **Totals** | **9,713,373** | **$43,639,528** | **85,564** | **$8,556,400** | **$32,919,659** | **$85,115,587** | **$55,497,632** | **$3,117,126** | **$24,246,631** | **$167,976,976** |

## Table III

### Capital Accounts Representing Reported Investment for the 16 Trunkline Air Carriers

At September 30, 1950

| Name of Carrier | Capital Stock: Common No. Shares | Capital Stock: Common Amount | Capital Stock: Preferred No. Shares | Capital Stock: Preferred Amount | Capital Surplus | Total Paid-In Equity | Earned Surplus | Long-Term Debt | Total Reported Investment |
|---|---|---|---|---|---|---|---|---|---|
| American | 6,452,835 | $6,452,835 | 400,000 | $40,000,000 | $6,159,653 | $52,612,488 | $14,151,812 | $35,950,000 | $102,714,300 |
| Eastern | 2,395,572 | 2,395,572 | ..... | ..... | 4,416,847 | 6,812,419 | 23,318,275 | 1,333,334 | 31,464,028 |
| Trans-World | 2,424,672 | 12,123,360 | ..... | ..... | 11,492,709 | 23,616,069 | 2,407,047 | 45,916,123 | 71,939,239 |
| United | 2,069,546 | 20,695,466 | 93,041 | 9,304,100 | 13,327,620 | 43,327,186 | 9,768,339 | 22,720,000 | 75,815,525 |
| Braniff | 1,000,000 | 2,500,000 | ..... | ..... | 4,075,130 | 6,575,130 | 1,832,103 | 2,323,019 | 10,730,252 |
| Capital | 510,205 | 510,205 | ..... | ..... | 3,089,336 | 3,599,541 | —459,252 | 8,526,131 | 11,666,420 |
| Chicago & Southern | 509,326 | 4,893,645 | ..... | ..... | ..... | 4,893,645 | 856,513 | ..... | 5,750,158 |
| Delta | 500,000 | 1,500,000 | ..... | ..... | 3,717,329 | 5,217,329 | 2,276,773 | 1,675,000 | 9,169,102 |
| National | 1,000,000 | 1,000,000 | ..... | ..... | 5,988,705 | 6,988,705 | —53,932 | ..... | 6,934,773 |
| Northwest | 820,808 | 8,208,080 | 384,845 | 9,621,125 | 2,820,970 | 20,650,175 | 24,432 | 15,710,362 | 36,384,969 |
| Western | 525,164 | 525,164 | ..... | ..... | 2,768,247 | 3,293,411 | 1,709,122 | 2,439,637 | 7,442,170 |
| Colonial | 515,600 | 515,600 | ..... | ..... | 3,108,046 | 3,623,646 | —1,672,646 | ..... | 1,951,000 |
| Continental | 309,406 | 386,757 | ..... | ..... | 460,391 | 847,148 | 1,508,409 | 775,000 | 3,130,557 |
| Inland | 164,218 | 164,218 | ..... | ..... | ..... | 164,218 | 767,869 | ..... | 932,087 |
| Mid-Continent | 415,448 | 415,448 | ..... | ..... | 662,200 | 1,077,648 | 1,148,574 | 897,612 | 3,123,834 |
| Northeast | 648,949 | 648,949 | 78,709 | 1,574,180 | 1,764,714 | 3,987,844 | —67,215 | ..... | 3,920,628 |
| Totals | 20,261,749 | $62,935,299 | 956,595 | $60,499,405 | $63,851,897 | $187,286,601 | $57,516,223 | $138,266,218 | $383,069,042 |

volumes produced a $19 million profit.

Tables II and III present detail, by company, comprising the totals at December 31, 1945 and September 30, 1950. While certain companies accomplished their postwar financing according to a chosen plan, it is true that others were caught by the disappointing course of events, and were obliged to raise capital through those avenues which remained open to them.

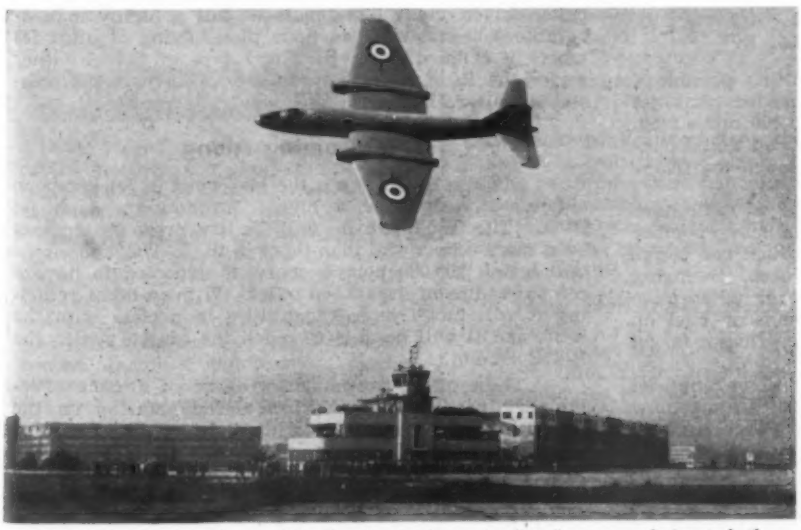
### Financing Balance

The appropriate relationship of equity and debt is a matter of opinion and must be judged in the light of each company's capital program. There is good reason to employ short-term debt to finance temporary need. Argument can be made for debt financing of equipment purchases where interest and amortization of principal are spread over the true useful life of the equipment. However, where there is a permanent increase in need for capital, equity financing offers numerous advantages.

The question which is raised by favorable results during the past two years is whether future financing will follow the pattern of the past five years. This question is sharpened by impending equipment purchases of American, Chicago & Southern, Capital, Delta, Eastern, National, TransWorld, and United, totaling more than $138 million. Furthermore, when public confidence is sufficiently restored, there may be opportunity for revision of existing capital structures through re-financing, where this is desirable.

Restoration of public confidence will depend not only upon the healing of old wounds but also the establishment of good earnings, good future prospects, and stability. Earnings for 1949 approached $19 million and for nine months of 1950 were $24 million. The annual figure for 1950 will approximate $39 million.

Domestic revenue passenger miles, which had held stubbornly at a little over six billion per year in postwar years, increased in 1950 to 7.8 billion. Under the impetus of war mobilization, this figure will almost certainly run higher in 1951. With improved earnings and good future prospects in hand, it remains for the industry to demonstrate to the investing public that the third element, stability, is a characteristic which can be maintained.



**New Home—** The English Electric Canberra jet bomber, now designated the B-57A by the U. S. Air Force, is shown circling the airport at The Glenn L. Martin Company's plant in Middle River, Md. Martin will build the B-57A under license as a light bomber for the USAF.

## PEOPLE IN THE NEWS

**Maj. Gen. Thomas F. Farrell,** former chairman of the New York Housing Authority, has been named Deputy Defense Production Administrator "for resources expansion." He will coordinate all DPA work involving plant expansion and increasing production of basic resources.

**Stephane P. Thouvenot** has taken up his new duties as Deputy Director General of the International Air Transport Association in Montreal after two months of familiarization duty in Europe. He was formerly director of air navigation and transportation in the French Transport Ministry.

**H. Danforth Starr,** who was prominent for a number of years in aviation circles, has been elected to the newly created office of vice president of the Cerro de Pasco Copper Corp. of New York. Formerly secretary-treasurer of American Overseas Airlines and before that a director and assistant to the president of Northeast Airlines and secretary-assistant treasurer of National Aviation Corp., Starr had been assistant to the president of Cerro de Pasco for approximately 13 months.

**Between the Lines:**

# • Fueling Jet Bombers in Flight
# • AF Altering 'Polar Concept'
# • Jets Could Hit Russian Targets

**By James J. Haggerty, Jr.**

THE ANNOUNCEMENT that a Boeing B-47 jet bomber had been successfully refueled in flight didn't seem to cause much excitement in the daily press, but we imagine it got quite a bit of attention in Moscow, for it poses the Red Air Force a real problem in air defense. The reason is that jet bombers will soon be capable of reaching Russia's inland targets, where previously it was thought that their range capabilities would limit their use to "fringe" targets. As a result, the Soviet Union is going to have to revise its air defense concept.

For the past five or six years our Air Force has been concentrating on the "polar concept" of bombing attack, wherein we would wage intercontinental strategic warfare with Convair B-36 bombers based in Alaska or in the northern U. S. proper. The Soviet Union prepared its air defenses accordingly.

It built the Arctic Perimeter Interceptor Force, a ring of fighter bases and radar stations stretching from Latvia to the northeastern tip of China and concentrated in this arc of bases a large portion of its available jet interceptors and the bulk of its radar detection and early warning equipment. This defense ring, equipped with the speedy, maneuverable MIGoyan-15 swept-wing jets, presents a formidable obstacle to over-the-pole B-36's.

But now, it appears, the Air Force is shifting the emphasis of its strategic plan. This is apparent in two developments: the feverish concentration in attempting to secure air bases in North Africa, Turkey and Greece and the current procurement program, where the B-36 is de-emphasized and the production concentration centered on two jet bombers, Boeing's B-47 and B-52. It would appear that the USAF has decided that it can wage a more effective strategic bombing war using fast, high-altitude jets based on the Soviet Union's southern flank.

## Jet Bomber Range Grows

Observers wouldn't have thought this possible a year ago, when it was generally conceded that jet bombers couldn't hit targets more than 1,000 miles from their base. Given bases in Morocco, Tripoli and Dhahran, for instance, they could just barely touch the fringe of Russia proper.

But in a comparatively short time we will have jet bombers with range capabilities in the heavy bomber class, by Air Force definition bombers which can strike targets more than 2,500 miles from their base. Swinging 2,500 mile arcs from presently available or prospective bases in England, North Africa and the Near East on our war map, we find that they cover every major target in western Russia.

The Boeing B-47C will be the first long-range jet bomber. The "C" is a new version of the Stratojet now coming off the production line at Boeing's Wichita plant. It will be similar in general configuration to the earlier B-47's, but it will have a redesigned wing and four engines instead of the six which now power the plane. It is estimated that it will have a combat radius of 2,200-2,400 miles without the help of in-flight refueling. Thus the "C" will have range capabilities directly comparable to Boeing's piston-engine bomber, the B-50, post-war successor to the B-29.

The "C" gets its increased range from three sources. First, it will have only four engines gobbling up the fuel instead of six. Despite this, however, the four engines will turn out considerably more "push" than the six engines now in the plane. Second, the engine which will power the plane, the Allison J-35-A-23, is very economical on fuel for a jet. It has the lowest specific fuel consumption rate of any jet engine in production.

## More Fuel Capacity

Third, the "C" will have considerably more fuel tank capacity than its predecessors. A tremendously heavy plane for a two-place aircraft, it will weigh in the neighborhood of 250,000 pounds. This compares with a gross weight of about 200,000 pounds in the B-47B, so it is obvious that provision has been made for quite a bit of additional fuel, since the structural modifications required for the extra power the "C" will have would not account for such a weight increase.

It is estimated that in-flight refueling will add about 500 miles to the combat radius of a plane operating from any of the bases mentioned above. This can be stretched somewhat, but it must be remembered that a tanker and a bomber joined by a rigid refueling boom present a vulnerable target to an enemy fighter, so the refueling must be accomplished far enough from defended territory that no fighters will be encountered.

Thus, the combat radius potential of the B-47C, with a safe in-flight refueling, is 2,700-2,900 miles, enough to sweep all of the targets in western Russia from the aforementioned bases and the eastern targets from bases in Japan or Okinawa. Only the targets in the Novosibirsk-Tomsk area in the central part of the USSR are out of range. And this is no lumbering propeller-driven giant like the B-36, but a highly maneuverable, 600-plus mile an hour plane flying at altitudes where it is hard to envision any type of fighter either we or the Russians now have or will have in the foreseeable future making a successful interception.

## B-52 Coming Along

But the B-47C is not the last word in jet bombers, either. It will have a bigger brother, the eight-jet B-52. The B-52, which will be powered by engines even more economical than those in the B-47C, and which will weigh 100,000 pounds more, is expected to have a combat radius of over 3,000 miles. With in-flight refueling it will have range capabilities in a class with the B-36, and it will be able to reach the targets which the B-47C cannot.

These planes are not drawing board dreams. Preliminary production work has already started on the B-47C and the first model will fly late this year. The first planes should be in operational service within a year. The XB-52 will also fly late this year, and the first production models should be coming off the line early next year. So maybe the Soviets ought to pause in their development of the Arctic Perimeter Interceptor Force long enough to take a look around and see if they might not be in for some trouble from another direction.

## INDUSTRY PERSONNEL

**Charles L. Hall,** formerly with the Engineering Division of the USAF's Air Materiel Command, has been named technical representative in charge of Bell Aircraft Corp.'s new Dayton office in the Talbott Building, 129 N. Ludlow street.

**E. D. Starkweather,** industrial relations director of North American Aviation, has been elected national chairman of the industrial relations advisory committe of the Aircraft Industries Association.

**Robert G. Bounds,** formerly assistant division superintendent of The Glenn L. Martin Co., has been promoted to divisional superintendent. His former post has been taken over by Carl A. Moesta, a Martin foreman since 1939. Bounds has been with the company 20 years.

**H. M. "Hoot" Ellis,** formerly sales manager of Hamilton Standard Propeller division of United Aircraft Corp., has joined Lockheed Aircraft Corp. as assistant to general sales manager **Leonard K. Schwartz.**

**G. B. "Jerry" Clark,** former Washington representative of Bell Aircraft Corp., has been named director of helicopter contracts, in charge of all helicopter sales, service, spare parts, flight test and flight and ground training schools.

**G. D. McVicker,** project engineer on the Convair 240 since may, 1948, has been appointed to the newly created post of project manager for the Convair 340, with responsibility for all phases of operations connected with the new Consolidated Vultee transport.

**Richard F. Privil,** for the past five years head of North American Aviation's wing group, has been appointed as assistant chief project engineer.

## MILITARY PERSONNEL

**Mack Webb** has resigned as civilian deputy to Brig. Gen. Sory Smith, Air Force director of public relations, to enter private business.

**Charles E. Yeager,** experimental flight test pilot who made the first supersonic flight in the Bell S-1, was one of 14 AF captains at the Muroc test base promoted to the temporary rank of major. **Maj. Gust Askounis** and **Maj. Frank K. Everest, Jr.,** chief and assistant chief, respectively of the experimental flight test section, were promoted to temporary rank of lieutenant colonel.

**Jack Anderson,** formerly in the public relations department of Douglas Aircraft Co., Curtiss-Wright Corp. and Aerojet Engineering Corp., has been named special assistant to the director of Flight Safety Research of the Air Force with headquarters at Norton AFB, San Bernardino, California.

## PRODUCTION SPOTLIGHT

**F3D-2 Deliveries to Start:** **Douglas Aircraft Co.'s** El Segundo plant will soon start making deliveries of the F3D-2 Navy fighter, new version of the twin-jet, two-seat all-weather Skyknight. The F3D-2 has a number of improvements over the F3D-1, including a new type G3 autopilot which has a yaw damper to eliminate directional oscillation, a revised instrument panel, controls improved for accessibility, a better air conditioning system, thicker windshield glass and spoilers for a higher rate of aileron roll. All of the F3D's since the experimental models have larger nacelles to incorporate new power plants when they are available, and it is believed that the Westinghouse J-46 engine will supplant the Westinghouse J-34's in the current models. F3D-1 deliveries have been made to the Navy at Moffett Field, Calif., and to the Marines at El Toro, Calif. The F3D-2's are expected to go to the Navy's all-weather squadron at Atlantic City, N. J., and to the Marines at Cherry Point, N. C.

**Plant Space for B-57:** *The Glenn L. Martin Co. has no immediate plans to expand its Baltimore, Md., plant despite its recently acquired contract to build the B-57A twin-jet light bomber, USAF version of the British English Electric B.2 Canberra. A company spokesman said that while new plant space is needed for B-57 production, no new construction will be required. It is believed that Martin will use what was once its No. 2 plant, now used as an Army Signal Corps depot, for B-57 work, if control of the plant can be regained. The No. 2 plant has 1,500,000 square feet of floor space.*

**B-47 Modification at Tulsa:** Douglas Aircraft Co.'s new plant at Tulsa, Okla., scheduled to produce Boeing B-47C jet bombers later, will go to work "in the immediate future" on a B-47 modification program to get the plant in shape for production. The modification program will permit Douglas to train workers before actual production gets under way. The B-47 schedules have not been completely worked out yet so Douglas does not know how many workers it will require at Tulsa. The company officially took over the Tulsa plant March 1.

**Packard Tooling Program:** *Packard Motor Car Co. will require 14 months to tool up for production of the General Electric J-47 jet engine assigned to the company under the Air Force's mobilization program. After the tooling work is completed, another 10 months will be required before Packard hits peak production. During the two-year period, Packard's employment, now 9,000, will be increased gradually until it reaches an estimated peak of 28,000.*

**Lockheed Starts Delivery Hangar:** Lockheed Aircraft Corp. is starting construction of a new $400,000 hangar at Palmdale, Calif., Airport. Occupancy of the hangar, which will serve as a delivery station for jet planes, is scheduled for mid-October. Designed for future extension, the hangar will cover an area of 165 by 180 feet and will have a door and clear interior span 150 feet wide and 40 feet high. Topping one side of the hangar will be an electronics and radar testing station. A crew of about 25 will be assigned to the Palmdale depot.

**Third of Willow Run for Packets:** *Kaiser-Frazer Corp. will use only one-third of its Willow Run plant, about 1,000,000 square feet, for production of the Fairchild C-119 Packet. More than 20 carloads of machine tools and other production equipment, much of it from Air Force tool reserve stocks, have arrived at the plant. Equipment is also being shipped to more than 500 subcontractors who will supply about 35% of the C-119 sections for final assembly.*

**New Helicopter:** McCulloch Motors, Los Angeles, Calif., has developed a new entry in the helicopter field, the MC-4, a two-place tandem rotor helicopter. Flight tests have already begun on the plane. McCulloch is a manufacturer of single-cylinder industrial engines used to power target planes. During World War II the company manufactured aircraft superchargers in Milwaukee, Wis.

**Materials Plan Modified:** *Modifications in the Controlled Materials Plan, scheduled to go into effect July 1, will cover only about 50% of the distribution of the three prime metals—steel, copper and aluminum. National Production Authority officials feel that complete control is unnecessary during a partial mobilization.*

—J. J. H.

*PUSH-BUTTON SELF-STARTER FOR THE FIRST U. S. TURBOPROP TRANSPORT*

# ANOTHER AIRESEARCH FIRST!

A flick of the switch . . . a 2750 hp Allison 501 engine roars into action. Seconds later a twin 501 is fired . . . and America's first turboprop airliner is ready for takeoff.

It's the Convair Turboliner purchased by Allison Division of General Motors to demonstrate turboprop engines in air transports. This is the first turbine powered airliner in the world able to start its own engines an unlimited number of times.

This self-starting system was pioneered by AiResearch, working with the Navy Bureau of Aeronautics. A low pressure pneumatic system, it consists basically of a small gas turbine the size of a hand valise and two small air turbine starters. It is the only self-contained, continuous self-starting system for turboprop and turbojet engines light enough to be airborne!

Development of the AiResearch low pressure pneumatic power system was begun six years ago. It is also being used on the Navy Convair XP5Y turboprop flying boat and the Navy Douglas A2D turboprop dive bomber now in production.

Another AiResearch *first* — this system reflects our technical skills and ability to solve problems of unusual difficulty in the field of aeronautics.

*AiResearch lightweight gas turbine*

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***• AiResearch — Specialists in the design and manufacture of equipment involving the use of high-speed wheels — is a leader in the following major categories:***

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**AiResearch Manufacturing Company, Dept. C 4, Los Angeles 45, California**

**FIRST TRANSPORT APPLICATION:**

# Integrally Stiffened Wings in Super Connie

*By* FRED S. HUNTER

LOCKHEED Aircraft Corp. is making use of integral stiffening in wing surfaces of the L-1049C Super Constellation, the first such application in a transport airplane.

Through its pioneering in this technique in the fabrication of aircraft structures, Lockheed is gaining the additional structural strength to take full advantage of the increased horsepower of the compounded engine going into the C version of the Super Connie without having to accompany it with an increase in structural weight in a corresponding degree.

As a matter of fact, through application of the integral stiffening process in the under surfaces both of inner and outer wing panels an actual saving in weight is achieved even though an increase is made in sheet thickness.

The 130,000-pound takeoff gross of the 113½-foot Super Constellation (it is 116 feet two inches with radar nose), made possible by the 3,250 horsepower developed for takeoff by the Wright Turbo Cyclone C18DA-1 engine, is 23,000 pounds higher than the maximum gross weight of the L-749, which is the latest model Constellation currently in use. This makes an increase in wing loading from 64.8 pounds to 78.8 pounds per square foot for the unchanged wing area of 1,650 square feet. The first Constellation, incidentally, the Model 49, initially had a gross of 86,250 pounds with the same wing area.

## 18-Ft. Section Added

Adding 18.4 feet to the length of a transport airplane as Lockheed has done with the Super Constellation, needless to say, involves a substantial amount of weight for the section itself. In addition, Lockheed is incorporating such refinements as 18 by 16-inch square-type windows requiring more stressing and therefore more weight; a refrigeration system supplying 17 to 19 tons of refrigeration as compared to 10 to 13 tons in the L-749; cabin pressure for 45,000 feet; a new de-icer system, and improvements in cockpit facilities, among others, all requiring more weight. Landing gear, of course, is stronger and heavier and the higher horsepower rating of the Wright Turbo Cyclone means a heavier power egg. Weight of the Turbo Cyclone, including exhaust system, is given at 3,443 pounds, or approximately 500 pounds more than the standard Wright Cyclone 18, making a differential of around 2,000 pounds in the four engines themselves.

In the L-1049C, Lockheed comes out of these modifications with an average operating weight empty of approximately 75,000 pounds, which is only 11,000 pounds greater than the 64,000 pounds of the current L-749. Landing weight for the Model 1049C is 105,000 pounds (it goes up to 110,000 ponds in the cargo version) and zero fuel weight is 100,000 pounds. This combination of weights translates into favorable payload allowances. The Model 1049C, at the foregoing empty operating weight, will carry a typical capacity payload of 25,000 pounds at normal cruising power with reserve fuel for three hours a distance of 2,600 miles.

## Two Super Versions

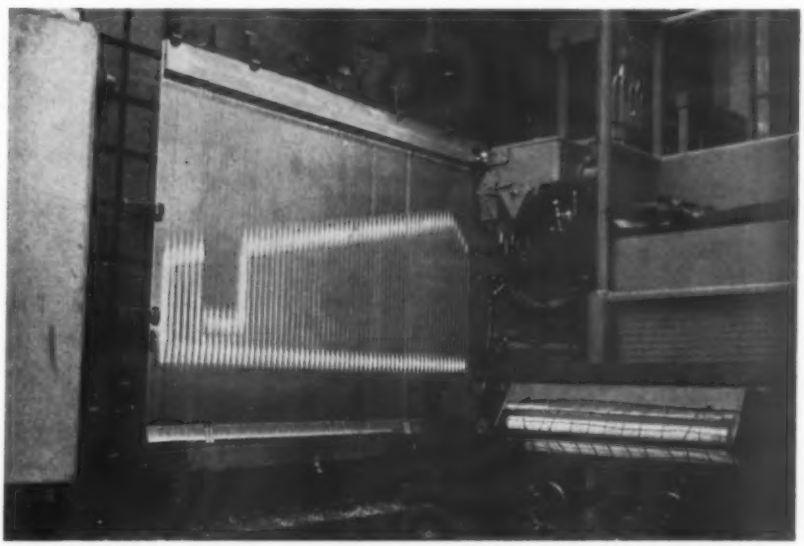
There are two versions of 18.4-foot longer Super Constellation, the Model 1049 and the Model 1049C. Lockheed counts a cargo version of the latter as a third, designating it the Model 1049B.

The L-1049 is powered with conventional C18CA-1 Wright Cyclone engines, which, with water injection, develop 2,700 horsepower for takeoff. At a later point in the production line, however, a new engine, the C18CB-1, which develops 2,800 horsepower for takeoff, will go into this model. This engine also has a higher blower gear ratio for more cruise and it has the compound engine cylinders and ignition system to make it readily convertible without much change in the power egg by sandwiching the geared turbine section between the main case and the rear assembly case.

A weight increase has been effected in this model since its first announcement, although no integral stiffening is employed in the wing structure. At the time the first order was placed by Capt. Eddie Rickenbacker, president of Eastern Air Lines, the L-1049 had a gross takeoff weight of 116,000 pounds. Landing weight was 96,500 pounds and zero fuel weight 91,500 pounds. Subsequently, the takeoff gross was increased to 120,000 pounds, the landing weight to 98,500 pounds and the zero fuel weight to 93,500 pounds. All of the EAL planes, as well as those ordered by TWA, will have the higher weights.

## Extensive Testing

Lockheed's initial Constellation venture in integral stiffening is being made after a wide range of research and experimentation in the subject and the static testing of an experimental Constellation outer



UNDERSIDE of an integrally stiffened wing panel with reinforcement ribs machined on the face of the skin. Construction like this will be used by Lockheed Aircraft Corp. to reduce weight, increase structural efficiency and obtain better aerodynamic properties in lower wing surfaces of the L-1049C Super Constellation.

# Design Trends

**By Richard G. Worcester**

A CASUAL reference to the Douglas XF4D-1 in the company's annual report shows that this aircraft has made history. It is the world's first, and only, jet to breast the sonic hump in level flight. Calculations show that from a performance standpoint at between 25,000 and 30,000 feet, its speed line just edges over M. 1.0. In other words the fall-off in the speed of sound with altitude is marginally greater than the fall-off in speed of the F4D.

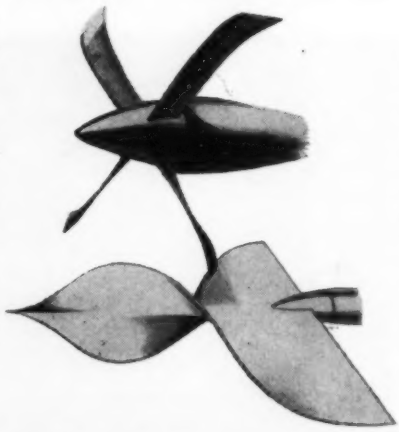
A friend writes to say that according to his slide rule the Lockheed F-90 would need 26,000 lbs. thrust to reach M 1.0 at sea level. We agree with another friend who put it at 21,000 lbs. using the same figures (wing area 350 sq. ft. and $C_D$ .05). But either way it is a prohibitive amount of thrust. Even if the Westinghouse J-34 engines were replaced by the world's most powerful jets (two Allison J-35.A.23's totalling 19,800 lbs. thrust) the F-90 is still a decidedly subsonic airplane. As we pointed out a few weeks ago twelve different jets—or 13 if we add the B-47—can reach sonic speed in a dive while the Bell X-1 and Douglas D-558-II reach their best speeds in a climb towards 100,000 feet—the optimum altitude for the highest Mach number.

•

*The statement in the British Parliament that the Canberra has a speed of "well over 500 mph" coincides with the news that the Rolls-Royce Avon jet has a thrust of the 6,500 lbs. for which it was designed. The widely held impression that the Canberra had a speed of approaching 600 mph was undoubtedly caused by the fact that the thrust of the Avon was officially given more than a year ago as about 7,000 lbs. Thus the Martin B-51 with a speed of 630 mph must be about 90 mph faster than the Canberra but with the penalty of nearly twice the wing loading.*

•

There were two interesting references in a new book *Airplane Aerodynamics*. One was the picture (reproduced here) of a helical delta wing supersonic propeller. H. S. Ribner of the NACA establishes the case for this development as follows: "airfoils of triangular planforms exhibit relatively good lift-drag ratios at supersonic speeds for which the triangle is contained well within the Mach cone emanating from the apex." Also shown is a typical conventional propeller of thin section with blades probably made of solid titanium and thickness ratio of 2-3%.



The other item was a drawing of a supersonic seaplane with a conventional but watertight fuselage for static flotation and hydrofoils for takeoff and landing. This is obviously similar to the Convair Skate which is generally believed to use centrally mounted hydrofoils of low aspect ratio. The book, written by D. O. Dommasch, Sydney Sherby and Thomas Connolly, is well worth getting.

Because of serious illness in his immediate family in England, Mr. Worcester has returned to London and this column will be missing for an indefinite time. While in England Mr. Worcester will serve as correspondent for AMERICAN AVIATION and his contributions will appear regularly.

EXPERIMENTAL integrally-stiffened skin section for a Lockheed fighter plane produced by the forging method. Skin and ribbing forged in a single part replaces one ordinarily made by assembling and riveting 25 individual pieces. William Schroeder is the Lockheed research engineer checking the part.

wing structure made especially for the purpose.

The experimental outer wing structure was made interchangeable with the standard long-range Constellation outer wing, which serves as an integral tank carrying 565 gallons of fuel. Step-by-step comparisons were made with outer wings produced by conventional methods. As expected, the external surfaces were exceptionally smooth and, of course, free of rivets.

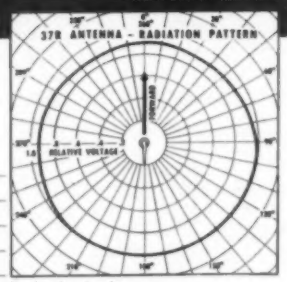
## No Skin Buckling

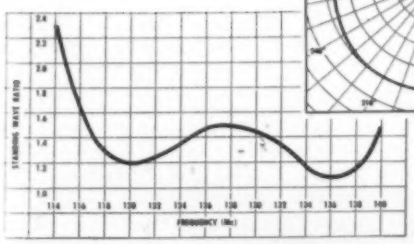
Tests showed no skin buckling occurred under any design load conditions. Splices and bulkhead flange attachments were made with a single row of rivets through thick skin pads integral to the panels. There were no chordwise splices over the entire outer wing span. Examination showed the machined taper in skin thickness and stiffener height provided optimum structural property at all stations.

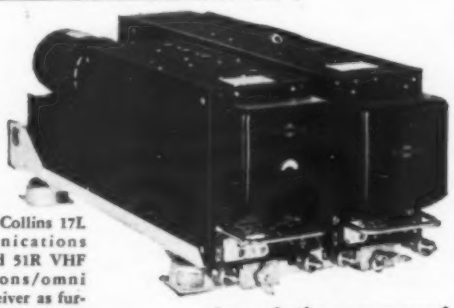
By integral stiffening of the lower portions both of the inner and outer wings of the Model 1049C, a weight saving amounting to 25% of the weight subject to redesign is realized, or approximately 440 pounds. Half of this is represented by elimination of splices and more efficient use of material. The other half is due to the weight of fuel tank sealing compound saved at stiffener-skin attachments. This latter feature of integral stiffening will produce lower maintenance costs in reducing tank stripping and re-sealing.

Slabs or billets one inch thick are used in fabrication of the integrally stiffened skin structure in the Lock-

# NEW! VHF COMMUNICATIONS ANTENNA FOR AIRCRAFT



Left to right: Collins 17L VHF communications transmitter and 51R VHF communications/omni navigation receiver as furnished in specially designed dual shockmount.

This is a portrait of the new Collins 37R-1 antenna, made expressly for use with the Collins 51R-17L two-way VHF communications system. It is designed for the most efficient radiation and reception of vertically polarized communications signals in the frequency range of 118 to 136 megacycles. Note the excellent radiation pattern and standing wave ratio graphed on this page.

The 37R-1 mounts externally on the skin of the aircraft. Its mounting base, identical with the Collins type 37J-2 omni antenna, greatly simplifies installation especially on pressurized aircraft. Only the r-f connector protrudes through the skin of the ship.

We invite inquiries and investigation of this highly specialized and effective development.

**In aviation communications, it's . . .**

COLLINS

**COLLINS RADIO COMPANY, Cedar Rapids, Iowa**

**11 West 42nd Street, NEW YORK 18** **2700 West Olive Avenue, BURBANK**

## Lockheed 1049C Super Constellation

### Characteristics

| | |
|---|---|
| Maximum Takeoff Weight, pounds | 130,000 |
| Maximum Landing Weight, pounds | 105,000* |
| Maximum Zero Fuel Weight, pounds | 100,000** |
| Engines | four Wright Turbo Cyclone C18DA-1 |
| Take Power, BHP/eng. | 3,250 |
| Fuel Capacity, U. S. gallons | 6,570 |

| SPEEDS (MPH) | 130,000 Lbs. | 105,000 Lbs. |
|---|---|---|
| Maximum at Critical Altitude (Rated Power) | 362 | 374 |
| Cruising at Critical Altitude at Maximum Cruise Power | 311 | 340 |
| Cruising at 10,000 Ft. with Maximum Cruise Power | 302 | 316 |
| Cruising at 20,000 Ft. with Maximum Cruise Power | 305 | 335 |
| **TAKEOFF AND LANDING** (Sea Level) | | |
| Minimum Takeoff Run, Takeoff Flap Setting, feet | 1,930 | 1,150 |
| Distance to Takeoff and attain a 50-foot Altitude from a Standing Start, Takeoff Flap Setting, feet | 4,300 | 2,450 |
| CAA Takeoff Airport Length at Sea Level, feet | 5,730 | 3,380 |
| Distance to Stop for a 50-foot Altitude, feet | ..... | 3,410 |
| CAA Landing Airport Length at Sea Level, feet | ..... | 5,050 |
| **RATES OF CLIMB** (Normal Rated Power and Hot Day Cowl Flap Setting) | | |
| Maximum at Sea Level with: | | |
| 4 Engines ft./min. | 1,195 | 1,880 |
| 3 Engines, ft./min. | 580 | 1,040 |
| **CEILINGS** (Normal Rated Power) | | |
| Service with 4 engines, feet | 23,200 | 27,600 |
| # Usable with 3 engines | 18,100 | 23,000 |
| # Usable with 2 engines | ..... | 9,800 |

*Max. Landing Wt. for cargo version is 110,000.
**Max. Zero Fuel Wt. for cargo version is 105,000.
#Usable ceiling where rate of climb is 50-Ft./Min.

heed transport. The largest sheet used, between the main spars for the inner wing, is 32 feet long and four feet wide. The slabs are milled out with a $130,000 electrically guided Hydrotel milling machine recently installed by Lockheed for this and similar purposes. Taper in skin thickness is machined to precise tolerances and the built-in ribs or stiffeners are formed to provide inherent rigidity and support the skin in carrying major surface stresses.

The machine method admittedly is expensive, the cost of fabrication and the waste in raw materials routed out by the milling machine overcoming the savings in assembly, and it represents no actual dollar saving in Lockheed's manufacturing processes —yet.

But the method eliminated 111 separate parts from assembly operations, not to mention no less than 3,000 rivets. Since assembly and assembly tooling represent major cost items in aircraft production, it is readily apparent that improved processes in this direction will inevitably result in substantial economies. Real progress in this respect is proceeding on several fronts.

Lockheed's research staff has been exploring extrusion, rolling, casting and forging as well as machining from plate for more than two years. It currently has an experimental contract with the Air Materiel Command for the development of press-forging in conjunction with the Wyman-Gordon Co. at Grafton, Mass., whose 18,000-ton Mesta is the largest vertical hydraulic press in the country as yet. The Air Materiel Command recently disclosed it had ordered two giant hydraulic presses of over 50,000 tons' capacity from the Loewy Hydropress Co. of New York and expects to have them ready in 18 months.

Press-forging of large aircraft sections in one operation will reduce fabrication and assembly operations in aircraft plants to the minimum, thus saving both time and money, the latter despite the need for the huge presses which cost so much. At the same time, greater strength and lighter weight would be obtained to add payload capacity and range to the aircraft reduced.

The forging method probably is the only feasible method for putting integral stiffening in the thin-type wings now the fashion for fast jet fighters. Extrusions may be more satisfactory for some operations. Lockheed is working on the use of a circular-section extrusion with regularly spaced T-shaped stiffeners, which can be cut and flattened, in a later P2V model. The Reynolds Metals Co. recently developed such an extrusion in 61S, 24S and 75S alloys under an Air Force contract.

The Super Constellation's under wing is a forerunner of the type of construction which engineers say inevitably must go into the American jet transport when it is built. Upper as well as the lower wing surfaces of the jet transport will have integral stiffening, Hall L. Hibbard, Lockheed's vice president and chief engineer declared. Lockheed is now using the machine method to produce certain integrally stiffened parts in its F-94 jet fighters.

**Largest Air Cooler**— Refrigeration is important in aeronautical research, where it is necessary to cool air to extremely low temperatures to simulate high altitude conditions in wind tunnels. Here is the largest single installation of refrigeration equipment in the world—14 Carrier Corp. 1,500-horsepower freon compressors—which provide cold air for research at the National Advisory Committee for Aeronautics' Lewis Filght Propulsion Laboratory, Cleveland, O.

# Airline Pilots Speak Up on Cockpit Visibility

By WILLIAM D. PERREAULT

THERE have been several prominent mid-air collisions involving transport-type aircraft in the postwar years. Possibly of greater importance than the small number of actual strikes is the high number of near-misses. A study of cockpit visibility, made by the Civil Aeronautics Administration at its Technical Development and Evaluation Center, shows that one of every four airline pilots has experienced such a near-miss.

Principal source of CAA material on pilot experience was a questionnaire sent to 6,061 airline pilots through the Air Line Pilots Association. Twenty-two percent of the questionnaires were completed and returned, 1,342 pilots providing detailed information on their operating experience as it relates to cockpit visibility.

In addition to the 25% (344 pilots) reporting near-misses as a result of poor visibility from the cockpit, another .8% were involved in actual taxi accidents and .5% had a collision in the air with another aircraft or struck an object during takeoff or landing.

## Pilots Make Suggestions

Pilots had many simple suggestions to make to bring about slight improvements in visibility. Typical of these were the relocation of the magnetic compass from the critical area in the center of the windshield, astrodome-type windows to permit the pilot to view the top and rear of the plane, elimination of curved panes and corner windows causing distortion, improvements in double-pane windows to eliminate double images, more effective windshield deicing and defogging, more positive "off" positioning of windshield wipers and general improvement in their operation, better seat adjustment, etc.

More important than these grievances is the general conclusion drawn from CAA's study. Apparently there are no general standards on which manufacturers base cockpit arrangements to insure minimum acceptable visibility standards—in many cases the manufacturers' data on their own aircraft is incomplete or inaccurate as compared with the production aircraft.

How qualified were the pilots to answer these questions? The average flight hours of the pilots answering the questionnaire was 4,750 hours. Flight times on the models which the pilot was flying at the time of the survey varied from three hours to 14,000 hours averaging as follows:

| | |
|---|---|
| Douglas DC-3 | 1,811 hours |
| Douglas DC-4 | 1,659 hours |
| Douglas DC-6 | 535 hours |
| Lockheed Constellation | 916 hours |
| Convair 240 | 284 hours |
| Martin 2-0-2 | 459 hours |
| Boeing 307 | 674 hours |
| Others | 187 hours |

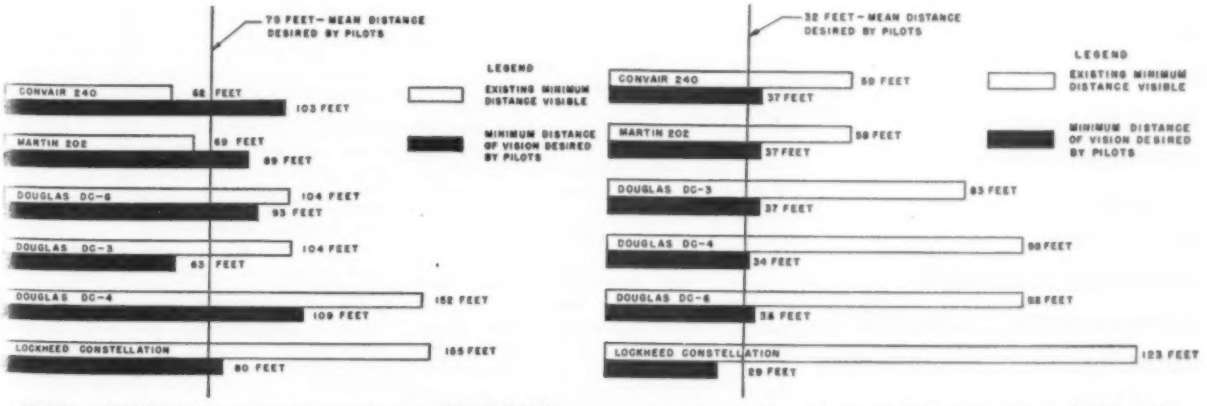
The final approach to landing was considered the most critical maneuver where visibility is concerned by 23% of these pilots. Gliding turns were next in the order of importance with 21% of the pilots singling this maneuver out, then came taxiing with 17%, landing with 10%, cruising and straight climb with 8% each, etc.

Ninety-six percent of the pilots felt it necessary to see some external portion of the aircraft (see drawing). Wing tips were considered as within this group by 92% of the pilots, nacelles and propellers by 97% and the main landing gear by 66%. As shown in the chart, pilots found varying amounts of head and body movement acceptable in an attempt to see these parts. For instance, 79% felt it would be acceptable to require moderate movement of the head and body in order to see the wing tips.

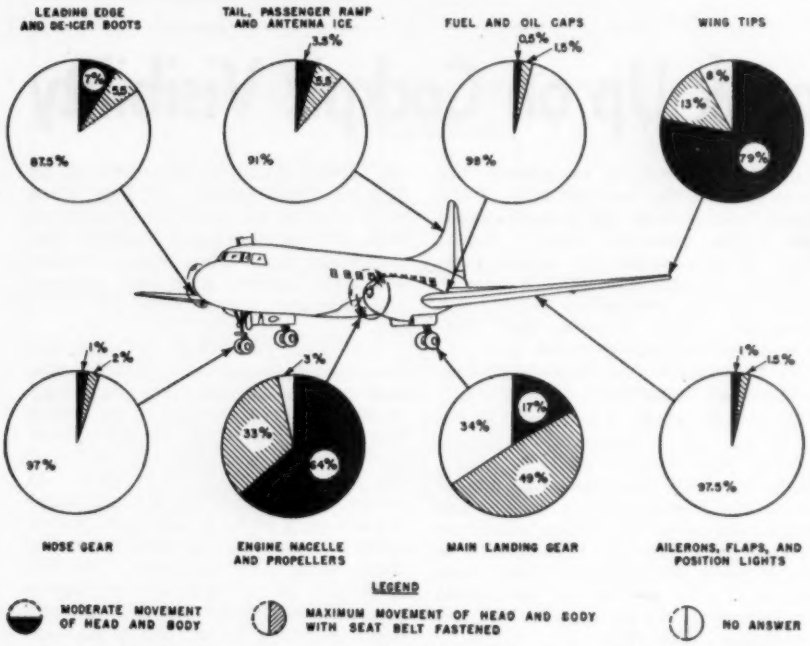
Essentially the pilot's view from the cockpit is controlled by the outline of the cockpit windows. The larger the window opening the better the visibility. It is desirable to provide a wide angle of vision, possibly 125-130 degrees either side of the windshield centerline. Similarly it is necessary to be able to see forward and down and forward and up during all maneuvers in the air and on the ground.

## Cut-Off Angle

The cut-off angle, defined by the edges of the window, control the amount of the vision. The nature of obstructions, such as support posts, combine with the type and curvature




PILOTS CONSIDER it important to see the ground immediately ahead of the aircraft. The lower edge of the windshield or the nose of the plane generally dictate the pilot's vision in this area. Above are two charts showing the pilot's desires as to minimum forward ground distance visible in the taxi at the touchdown condition (left) and during taxiing operations (right). The white boxes show existing minimum distance visible, the black boxes the minimum distance of vision desired by the pilots of the particular airplane and the vertical line the mean distance computed from the answers of all pilots.



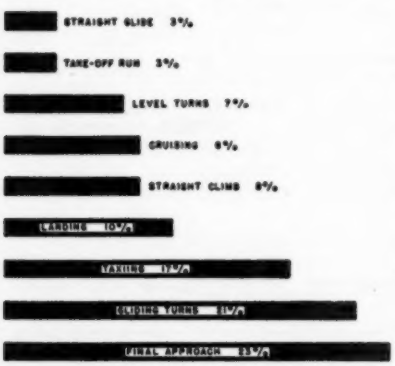

**CAA'S SURVEY** of over 6,000 pilots showed that 96% of those who answered felt it necessary to see some external part of the airplane. Shown above is a breakdown of relative importance placed on being able to see specific parts of the plane.

of the enclosure to determine the quality of vision that may be expected.

For example, less than half of the pilots involved were satisfied with the forward ground distance visible at the time of touchdown. This is illustrated in the accompanying chart in which is shown the geometric mean value, 75 feet, for ground distance visible. The white box shows the existing minimum and the black box the minimum distance desired by the pilot for that particular airplane.

With the Convair 240 and Martin 2-0-2, pilots now see the ground at a point closer than the average desired by pilots of all types of aircraft and some 40 feet closer than what the pilots of these planes consider adequate. While the Constellation pilots see 80 feet as the minimum forward ground distance visible at touchdown, the existing condition is 155 feet.

Another chart is presented here showing the equivalent information for the aircraft during taxiing.




**MOST CRITICAL** operation in so far as cockpit visibility is concerned, the pilots reported, is the final approach. This is followed by gliding turns and then taxiing.

## Eye-Level Factor

While the cutoff angles formed by the window dimensions are the principal factors affecting visibility, other factors are important. Pilot eye level is important. A detailed survey of the Douglas DC-3 and the pilots who fly it indicated that in many cases the pilot eye level is not in practice what it is assumed to be in studies related to visibility. Twenty pilots listed seat adjustment on all types of aircraft, a factor controlling pilot eye level, as inadequate.

The study indicated that many pilots feel the pilot should be quite close to the windshield and that visibility suffers as the pilot seat is moved further from the panel. Similarly the closeness of the pilot's head to the side windows is a major factor in controlling maximum view in certain maneuvers. The study uncovered considerable new information on the effect of airplane attitude on visibility.

The entire report, "Airline Pilot Questionnaire Study on Cockpit Visibility Problems," by George L. Pigman and Thomas M. Edwards, is available as Technical Development Report No. 123 from CAA, Technical Development and Evaluation Center, Indianapolis, Ind.

## AMONG THE SUPPLIERS

**Westinghouse Electric Appliance Division,** Mansfield, Ohio, has received a "multi-million dollar" contract for production of pylons for fuel tanks and external armament for the Republic F-84 Thunderjet . . . **Bill Jack Scientific Instrument Co.,** Solano Beach, Calif., has purchased a 60-acre site at Anza Village near Riverside, Calif., where a $1,200,000 steel frame plant will be erected for the manufacture of defense products. Employment at the plant is expected to reach 4,000 within a year . . . **Riverside Metal Co.,** Riverside, N. J., has received two Air Force contracts totalling over $200,000 for aircraft landing gear position indicators and rocket trap and spacer assemblies

A new $1,500,000 aero plant is being constructed by **Minneapolis- Honeywell Regulator Co.** for the manufacture of automatic pilots, electronic fuel gage systems and gyroscopes . . . **Aviation Engineering Corp.,** manufacturers of capacitance fuel gages and other aircraft instruments, has moved from Ozone Park to larger facilities in Woodside, L. I., N. Y. . . . **Albert G. Handschumacher** has been elected vice president of **Lear, Inc.,** and will assume responsibilities of assistant general manager of the Grand Rapids, Mich., plant.

**Modglin Company, Inc.,** Los Angeles, Calif., has formed a Metal Working Division headed by **M. G. Simpson,** and is expanding its facilities by some 50,000 sq. ft. to handle contracts and subcontracting of aircraft parts and sub-assemblies made of stainless steel, aluminum, aluminum alloys and magnesium. . . . The headquarters plant and engineering laboratories of **Westinghouse Electric Corp.'s** new Electronic Tube Division will be located on a 100-acre tract near Elmira, N. Y. . . . **R. W. Richardson,** manager of **Goodyear Tire and Rubber Co.'s** Aviation Products Division, has been named assistant to the vice president in charge of original equipment and government sales . . . **General Electric Co.** has named **L. T. Callahan** manager of operations of the Aircraft Gas Turbine Divisions at Lynn and Everett, Mass.

**Charles H. Barnes** has joined **Meletron Corp.,** Los Angeles manufacturers of pressure actuated switches for aircraft, as special assistant to the president . . . **Al Harting** has been named employment manager of **Southwest Airmotive Co.,** Love Field, Dallas, Tex., in addition to his duties as public relations and advertising director . . . **Bendix Radio Division** of Bendix Aviation Corp. has named **Thomas J. Fleming** assistant director of purchases. He is succeeded as plant engineer by **Thomas M. Murphy, Jr.,** with **J. Russell Sandstrom** as

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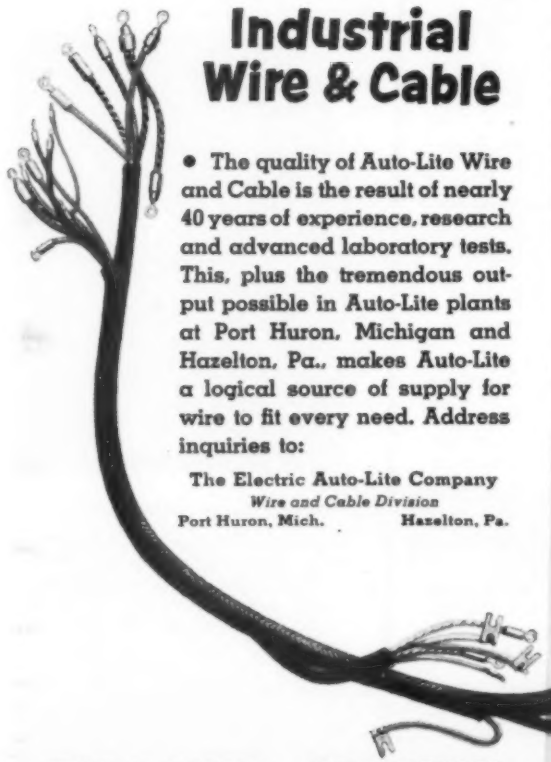

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# TECHNICAL NEWS DIGEST

• **Reexamination requirements** relating to flight engineers, navigators, control-tower operators and dispatchers have been amended to enable an applicant who has failed one or more sections of the written CAA test to retake it after receiving five hours' special instruction. A similar provision was previously provided for other airmen tests but this group had to wait 30 days before reexamination.

• **A military standard for photographic lenses** has been adopted and the U. S. Air Force has been named custodian of the standard for which it will draw up specifications.

• **To promote development of a more satisfactory** position light system for transport aircraft CAB has amended portions of Civil Air Regulation Part 4b permitting operators to vary the flashing sequence of the position lights.

• **An electronic test unit** which tests the course selector headings of the omni-range receiver to an accuracy of plus or minus ½ degree has been developed by Van Dusen Aircraft Supplies at Minneapolis' Wold-Chamberlain Airport. It can also be used to check right, left and center courses of the ILS runway localizer.

• **Final agenda for the 1951 Air Transport Association's** engineering and maintenance conference, to be held at the Drake Hotel in Chicago April 24, 25 and 26, is now available from Allen W. Dallas, ATA, 1107 Sixteenth St., N.W., Washington 6, D. C.

• **Possible effects of extremely high altitudes** on the brain and other nerve cells will be the subject of studies to be conducted by two researchers under a grant by the Public Health Service. The studies will be conducted by Dr. J. Francis Hartmann of the University of Minnesota and Dr. Marion E. Bunch of Washington University, St. Louis.

• **An order to build downward-thrusting** ejection seats for the Boeing B-47 and B-52 jet bombers has been received from the U. S. Air Force by Stanley Aviation Corp., Buffalo, N. Y.

• **A U. S. Air Force contract for** the overhaul of Pratt & Whitney Wasp Junior engines has been awarded Southwest Airmotive Co., Love Field, Dallas. This is the second such contract received by SAC in recent months.

• **A $479,805 heavy maintenance contract** with the U. S. Navy has been awarded Lockheed Aircraft Corp. for the overhaul of two Navy R60 Lockheed Constitutions. Work will take about 26 weeks.

• **Grand Central Aircraft Co. is installing** an "E" type fuel system, new outer wing panels and fuel dump chutes in a Douglas DC-4 for Pacific Northern Airlines in its shops at Glendale, Calif. The plane was a former Navy R5D.

• **A combination rifle and shotgun** that fits into a standard U. S. Air Force survival kit has been announced by the Air Materiel Command.

• **Los Angeles Airways logged 5,997 hours** of helicopter time in 1950, flying 364,256 miles without incident at a cost of $1.20 per mile, two cents per mile below the 1949 rate despite rising costs.

• **A new device for countersinking holes** in heavy-gauge sheet metal which will reduce the time ordinarily required for this operation by 80% and the man-hour costs by 90% has been developed by Boeing Airplane Co. The new unit, to be marketed by Buckeye Tools Corp., Dayton, Ohio, cuts a ½-inch hole in 75ST aluminum alloy in 30-40 seconds as compared with 3½ minutes by comparable methods.

• **A contract for demothballing** an undisclosed number of Boeing B-29's has been awarded Lockheed Aircraft Service by the USAF. The planes are now in storage at Pyote, Texas. After demothballing they will be flown to Marietta, Georgia, for overhaul by LAS.

• **New non-stop speed record of 10 hours and 23 minutes** from Japan to Hawaii was set recently by a Boeing C-97A operated by the Pacific Division of the Military Air Transport Service in the Korean Airlift. Average speed was 375 mph, top two-hour speed of 450 mph.

his assistant. **Robert E. Wine** is the new manager of subcontracting for Bendix Radio.

Stark

**W. T. "Tom" Stark,** formerly with Wright Aeronautical Corp., has been named executive vice president and director for **United Aircraft Products, Inc.,** Dayton, Ohio . . . **Airwork Corp.,** Millville, N. J., has extended its distributorship on Pratt & Whitney Aircraft parts to include Georgia, Alabama and Florida.

**Aeroquip Corp.,** Jackson, Mich., has purchased all of the oustanding stock of **Metalco, Inc.,** also of Jackson, who,

**Visual Detector—** Newest version of Walter Kidde's visual smoke detector is shown here. The visual detector eliminates the complexity of electronic equipment and should prove easier to maintain. Windows shown in this instrument, which fits in a standard instrument panel opening, are in a tubular section through which air from the sampling areas is drawn. Although the flashing light source in the detector is normally invisible, reflection of light from smoke particles in the air offers a flashing fire signal. Unit weighs 1¼ pounds.

# On the ground, it's a sitting duck

The Douglas "Globemaster" is one of the Air Force's biggest transport planes. But on the ground, this big bird is a sitting duck . . . as susceptible as delicate equipment to damage from water and weather.

That's why the Air Force gives it special attention. Wings and fuselage are covered tight against snow, ice and rain . . . but covers are equipped with zippers, so strategic parts may be inspected or repaired without taking the wraps off.

Conmar zippers can be depended on to work quickly and smoothly under any conditions. They're rust-proof . . . and can be furnished so as to be water-repellent and mildew-resistant. They lock firmly, won't slip once they are locked. They stand up under severe cross-pull strain. For coverings, upholstery . . . for any of the 200 different applications in the aviation industry, there's a Conmar zipper to do the perfect closing job.

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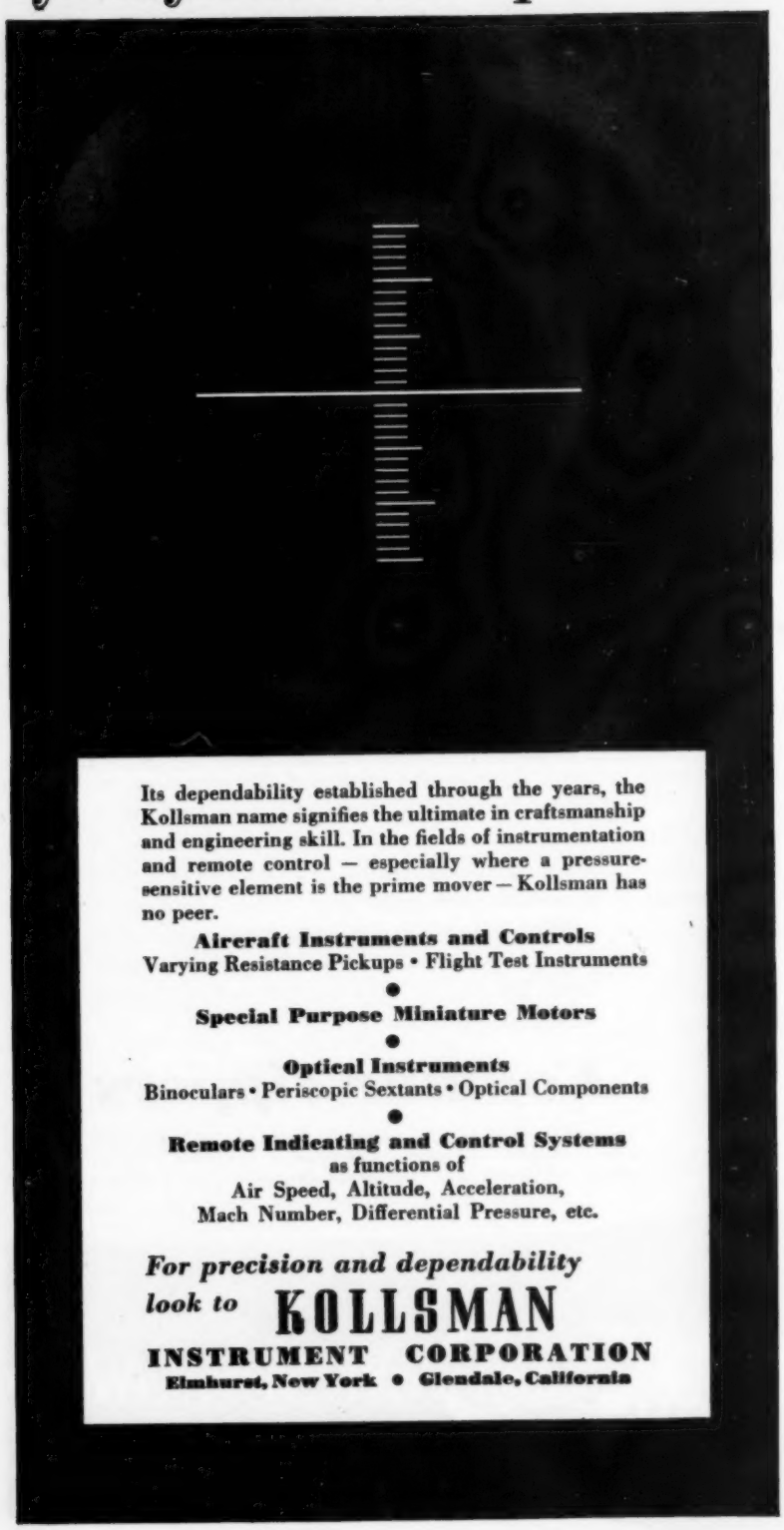

Its dependability established through the years, the Kollsman name signifies the ultimate in craftsmanship and engineering skill. In the fields of instrumentation and remote control — especially where a pressure-sensitive element is the prime mover — Kollsman has no peer.

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**Special Purpose Miniature Motors**

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**Optical Instruments**
Binoculars • Periscopic Sextants • Optical Components

●

**Remote Indicating and Control Systems**
as functions of
Air Speed, Altitude, Acceleration,
Mach Number, Differential Pressure, etc.

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**INSTRUMENT CORPORATION**
**Elmhurst, New York • Glendale, California**




as an Aeroquip subcontractor, has been furnishing special hose fittings, tube bends, etc. The newly acquired company will be operated as a subsidiary of Aeroquip, with **Kenneth Meyerholtz**, chief production engineer and plant superintendent of Aeroquip, as president and **Don Mortlock** as vice president and general manager . . . **Greer Hydraulics, Inc.**, has appointed **Thompson Engineering Service**, 708 Hemphill St., Fort Worth, Tex., to handle sales and service of Greer aircraft maintenance and test equipment in southwestern U. S. **Harold B. Webb**, 918 N. Kenilworth Ave., Glendale, Calif., will service the west coast for Greer.

**C. V. Johnson**, manager of landing gear and administrative engineering, has been named manager of the Mishawaka, Ind., plant of **Bendix Products Division** of Bendix Aviation Corp.

## Daily Plane Utilization

### International

| | | Nov. | Dec. |
|---|---|---|---|
| American | 4 eng. pass. | 4:11 | 4:08 |
| Braniff | 4 eng. pass. | 7:55 | 7:53 |
| C & S | 2 eng. pass. | 8:33 | 8:24 |
| | 4 eng. pass. | 10:54 | 7:41 |
| Colonial | 4 eng. pass. | 5:16 | 5:13 |
| Eastern | 4 eng. pass. | 9:24 | 9:27 |
| National | 4 eng. pass. | 7:44 | 7:34 |
| | cargo | 3:12 | 2:04 |
| Northwest | 4 eng. pass. | 9:26 | 9:05 |
| | 4 eng. pass. | 10:54 | 14:24 |
| Panagra | 2 eng. pass. | 3:53 | 3:42 |
| | 4 eng. pass. | 5:31 | 6:08 |
| | cargo | 3:30 | 3:19 |
| Pan American Latin American | 2 eng. pass. | 3:23 | 3:42 |
| | 4 eng. pass. | 6:05 | 7:25 |
| | cargo | 4:56 | 4:13 |
| Atlantic | 2 eng. pass. | 1:01 | 1:14 |
| | 4 eng. pass. | 4:49 | 5:11 |
| | cargo | 9:57 | .... |
| Pacific | 4 eng. pass. | 6:15 | 6:18 |
| | cargo | 16:48 | .... |
| Alaska | 4 eng. pass. | 6:33 | 6:24 |
| | cargo | 7:15 | 8:41 |
| TWA | 4 eng. pass. | 7:25 | 8:05 |
| | cargo | 4:15 | 1:53 |
| United | 4 eng. pass. | 4:34 | 4:43 |

### Feederlines

| | | | |
|---|---|---|---|
| All American | DC-3 | 5:16 | 5:29 |
| Bonanza | DC-3 | 4:03 | 4:39 |
| Central | Beech A-35 | 3:14 | 2:00 |
| | DC-3 | 6:23 | 6:14 |
| Empire | DC-3 | 4:54 | 4:39 |
| Frontier | DC-3 | 7:08 | 7:08 |
| Lake Central | DC-3 | 5:44 | 4:52 |
| | Beech Bonanza | 2:33 | 1:31 |
| MCA | DC-3 | 6:00 | 6:21 |
| Mid-West | Cessna 190 | 5:11 | 3:32 |
| Ozark* | DC-3 | 3:45 | 3:45 |
| Piedmont | DC-3 | 7:04 | 7:07 |
| Pioneer | DC-3 | 7:16 | 6:28 |
| Robinson | DC-3 | 5:34 | 6:04 |
| Southern | DC-3 | 7:04 | 6:34 |
| Southwest | DC-3 | 5:15 | 5:15 |
| Trans-Texas | DC-3 | 6:34 | 6:15 |
| West Coast | DC-3 | 3:39 | 3:41 |
| Wiggins | Cessna T-50 | 2:22 | 2:28 |
| Wis. Cent. | Lockheed 10A | 7:32 | 7:14 |

* Ozark began operations September 26, 1950. Utilization for September was 2:07 and for October 2:38.

## TECHNICAL LITERATURE

**PALLET TRUCK:** The Model "W" Towmotor electric pallet truck, engineered to handle pallet-loads up to 4,000 pounds is described in a new folder available from the literature department of Towmotor Corp., 1226 E. 152nd St., Cleveland 10, Ohio.

**HEAT TREAT:** Current technical and operating information on heat treating metallurgy and practice is described in a new eight-page illustrated bulletin being circulated by Surface Combustion Corp., Toledo 1, Ohio.

**FLOW RATE TESTING:** A technical report containing comprehensive data on the newest technical developments of fluid flowrate testing for the aviation industry is being circulated by Fischer & Porter Co., Hatboro, Pa. Technical bulletin A-9C-4 available on request.

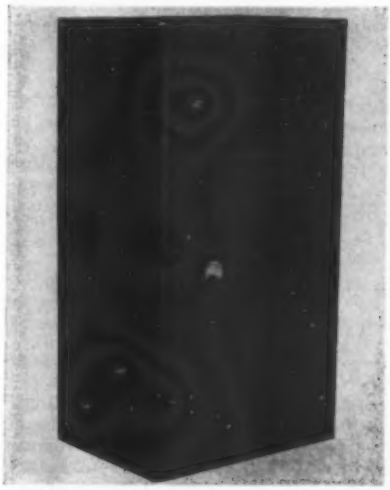
**MOTORS AND GENERATORS:** A 19-page booklet, B-4595, describing the Life-Line type SK direct current motors and generators is available from Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa. The illustrated booklet features design detail.

**WELDING ALLOYS CHART:** Complete specifications on some 100 different Eutectic low-temperature welding alloys are covered by a new reference chart available from Eutectic Welding Alloys Corp., 40 Worth St., New York 13, N. Y. A six-page folder which can be filed or bound or unfolded to an 11 x 23-inch chart for wall mounting.

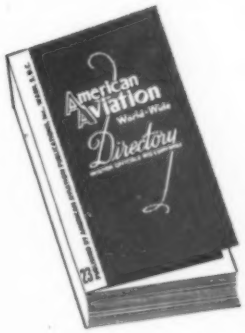
**STUD DRIVERS:** A four-page bulletin now available describes the "Aero-Thread" stud driver for use in driving or extracting studs without marring the threads or mushrooming the end. Bulletin includes information on operation of the driver. Bulletin 236-R. Heli-Coil Corp., 47-23 35th St., Long Island City, N. Y.

**AIRPORT LIGHTING:** Medium-intensity lighting equipment for small airports and for secondary runways and taxiways at large airports are covered in a new 28-page booklet recently released by Line Material Co., Airport Lighting Division, East Stroudsburg, Pa. Bulletin 49090 includes comprehensive instructions for installing three different types of system.

**Transport Splicing**—Martin 4-0-4's in final assembly. The Glenn L. Martin Co. has now spliced the first production airplane and will start making deliveries this spring.



AIRPORT RECORDER—This is the new four-channel airport recorder, designed and built by Brush Development Co., Cleveland, Ohio, to meet CAA's requirements for recording of communications messages transmitted between controllers and pilots. It provides four hours of continuous unattended recording with two hours as normal operating time with stand-by protection against unit failure. Separate tape erasing and play-back units are provided. Designed for safe operation and ease of maintenance.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**OPERATIONS & MAINTENANCE**

# Extra Section

**By William D. Perreault**

RECENTLY another airline lost a pilot via a cabin door which opened in flight. The losses and near-losses associated with cabin doors which come open in flight are a matter of record. The step-type cabin doors on the modified Douglas DC-3's have been a matter of particular concern among the airlines. Numerous methods for providing secondary safety catches have been proposed. One airline actually had CAA Regional approval for such an arrangement. Working within the letter of the regulations, CAA has yet to approve a locking arrangement which suits the requirements of these planes. Certainly, in the light of past experience, CAA should accept the best the industry has to offer, if it can not suggest something better, for this critical situation.

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*Speaking of safety, several items relating to this subject have come to our attention of late. One of these is an announcement from London that the British Air Registration Board will ask ICAO to require backward-facing seats on all transports. The proposal, probably prompted at this time by Britain's recent experience (Extra Section, Feb. 19) which proved beyond reasonable doubt the value of this type of arrangement in actual accidents, will be made during the conference of the Airworthiness Division now going on.*

•

Every now and then a company produces a worthwhile cartoon-type instruction booklet. E. I. du Pont has produced such a booklet: "Tank Talk." It's aimed primarily at cleaning and maintenance of fuel storage tanks, a job with which some of the airlines are undoubtedly faced, but also contains many interesting pointers applicable to general handling of fuels and safety equipment. A job of this type, instead of the usual dry presentation, would be a useful contribution to aircraft fuel-tank resealing. du Pont's Petroleum Chemicals Division at Wilmington, Del., is circulating the booklet.

•

*North American's John M. Wuerth told members of the Institute of Navigation a few facts about a flight to the planet Venus and some of its problems. In the fashion of past interplanetary enthusiasts, Wuerth said it would take 146 days to reach Venus along an efficient route. But we were interested in the navigational problem. In his attempt to intersect the orbit of Venus, the pilot of this rocket ship has some close figuring to do. Wuerth claimed that an initial error of one-tenth of a mile per second in the timing of the rocket cut-off would cause the ship to miss the target by 6,500,000 miles.*

•

Either by choice or by occupation many of us do not get the opportunity to make much use of a slide rule. When we do resort to one we are so clumsy with it that we lose interest. Engineers at Douglas Aircraft Company have designed their own pocket-size slide rule aimed specifically at general aeronautical problems and keyed accordingly for quick use without cross-reference to basic texts. In addition to conventional C, D and A scales, it has 20 "scales" peculiar to aviation problems: Mach number, true air speed, density altitude, temperature rise, etc. Pickett & Eckel, Inc., 5 South Wabash Ave., Chicago, Ill., is handling the manufacture and sale of the Sky Rule in a leather pocket case with instruction manual at $10.85 each.

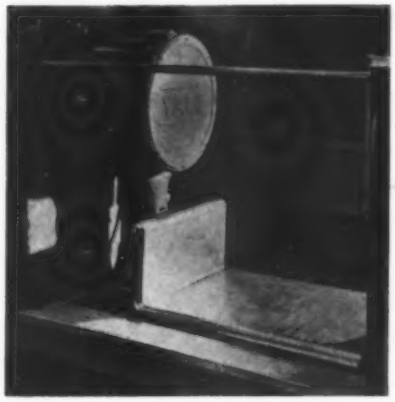
•

*A number of new aviation products are included in a list of products, processes and techniques available for licensing issued by The Institute of Inventive Research. The IIR, a nonprofit scientific foundation located in San Antonio, Texas, aids in the development, patenting, testing and marketing of new products. This year's list includes a new aircraft fuel gage, a coupling device, engine and flight factor indicator, a celo-position finder and a panoramic sextant.*

# NEW PRODUCTS

## Luggage Scale

A new scale for fast handling of passenger luggage has been introduced by Yale & Towne Manufacturing Co. Known as the "Flight King", the new unit features heavy-duty construction and an extra-large platform. The dials are arranged to permit both the agent and the passenger to read baggage weight, and graduations are available in combination metric-avoirdupois arrangements. The top plate of the scale is flanged to avoid damage to baggage. Now in use at domestic and international terminals, "Flight King" was developed at the request of several airlines.



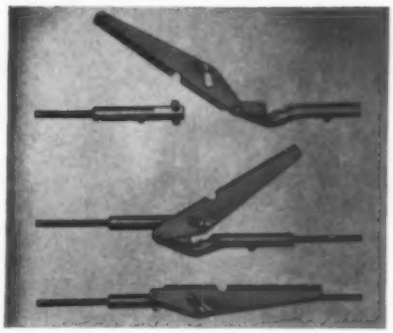
When contacting the **Philadelphia Division, Yale & Towne Mfg. Co.,** 1100 Roosevelt Blvd., Philadelphia 15, Pa., please mention AMERICAN AVIATION.

## Control-Cable Connector

Disconnecting aircraft control cables for overhaul or adjustment is only a matter of seconds with a new unit developed by Pacific Scientific Co. called the "Speed-Rig." The Speed-Rig eliminates the necessity of safety-rewiring the shank each time a cable assembly is disconnected. When properly adjusted for cable tension and safety-wired in position, it stays that way. Disconnects can be made without disturbing the rig by cutting one wire loop that secures the lever in safety position.

In disconnecting cables, the Speed-Rig lever is opened, increasing the length of the unit, permitting the separation of the cable without disturbing the turnbuckle portion. Using the high leverage of the Speed-Rig handle, the cable rig load is easily restored by closing the unit. This leverage feature assists riggers where installations are hard to reach. No tools are necessary to adjust tension as the lever provides an easy method of turning the barrel as a turnbuckle.

The Speed-Rig is designed to withstand 110% of the breaking strength of the cable and, with the handle safety-wired in closed position, it cannot open if the cable becomes slack. The Speed-Rig is made in two types, the standard turnbuckle type which fits existing turnbuckle terminals and the swage type which may be swaged directly to the cable, eliminating the terminals. At present this unit is made to fit cables of 1/16-inch diamenter through 3/16-inch diameter.



When contacting **Pacific Scientific Co.,** 1430 Grande Vista Ave., Los Agneles 23, Calif., please mention AMERICAN AVIATION.

## Hot-Cold Test Stand

A self-contained hot-cold test stand for testing aircraft components at temperatures ranging from —70° F. to +230° has been announced by Electro Mechanical Devices. A deep well in the test stand will handle parts measuring up to 6 x 6 x 8 inches. A temperature selector controls deep-well temperature throughout the entire range. The mobile stand, 30 x 40 x 54 inches in size, requires only power and water supply and these are handled by flexible connectors. Incorporates totally enclosed motors, automatic relief valves, explosion-proof electrical components, etc. Refrigerant used is a methoethanol solution, easy to service.

When contacting **Electro Mechanical Devices, Division, George L. Nankervis Co.,** 19255 W. Davison, Detroit 23, Mich., please mention AMERICAN AVIATION.

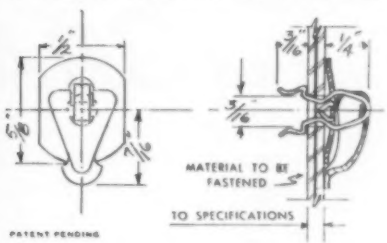
## New Mirror

A new lightweight, unbreakable mirror suitable for use in aircraft applications is being marketed by Flexmir, Inc. The new non-glass mirror weighs one-third as much as glass, is available in silver, gold, pastels and many other colors. The manufacturer claims it is shock resistant, will not steam up or cloud in frost nor distort at 160° F. or down to —40°. Flexmir's non-glass mirror can be molded for quantity production, cut into circles, squares, arcs and beveled form. It is made from Plexiglass, Lucite and a third exclusive patented material which gives it an abrasion-resistant finish. Sheets of magic mirror gage from .060 to .50 and can be made up to one-inch thick. Now in use by aircraft manufacturers and airlines.

When contacting **Flexmir Products, Inc.,** 20-28 Broome St., Newark 3, N. J., please mention AMERICAN AVIATION.

## Thumweld

A new metal-fastening device, known as "Thumweld," and designated as a permanent fastener for rapid assembly or disassembly has been introduced by The American Shower Door Co. Used to replace screws or bolts securing parts such as inspection plates, access plates, housings, panels, instruments, etc., the "Thumweld" is applied from one side through a 3/16-inch hole. While thumb pressure will lock the fastener it grips as securely as a metal screw or bolt, according to the manufacturer. Easily released with a screwdriver or thumb nail. Available for hole sizes ranging from ⅛ to ½ inch and for metal thicknesses up to ½ inch.




When contacting **The American Shower Door Co.,** 1028 La Brea, Los Angeles, Calif., please mention AMERICAN AVIATION.

You see it everywhere—businessmen turning to prosperous Latin America for new business opportunities, new sales outlets, sources of supply . . . pleasure-travelers seeking, and finding, gaiety, luxury and beauty in glamorous Latin America. Yes, the swing is to Latin America.

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Ω OMEGA Official Braniff Timepiece

SCENIC SPLENDOR marks your Braniff flight all the way through Latin America. Typical are the famous volcanoes, Mt. Illimani and Mt. Misti in the Bolivian Andes—breath-taking sights from your Braniff-Liner.

GREAT CITIES of millions offer big opportunities. Combine business and pleasure in beautiful Buenos Aires, pictured above, third city in the Western Hemisphere—or in Rio de Janeiro; Sao Paulo, Lima, Panama, Havana.

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# World-Wide Air Coach Services Coming?

## . . . CAB Opens Door for Reduced-Fare Atlantic Schedules

By WILLIAM V. HENZEY

IN WHAT could eventually lead to world-wide scheduled air coach services, the Civil Aeronautics Board last week urged immediate consideration be given by airlines to a trans-Atlantic coach operation and promised itself to give interim assistance to the lines by curbing overseas charter activities.

Best estimates are that, barring world-wide conflict, a frill-less service will be offered at reduced fares on high-density aircraft flying the Atlantic late this year or in early 1952. How long it will take for the service to become world-wide is problematical but industry observers feel that once the all-important trans-Atlantic question is resolved, the overall battle is more than half won.

To this end, CAB has invited foreign governments, particularly European governments, to give early thought to an Atlantic coach-type operation. This invitation being in addition to the suggestion passed on to interested airlines, including foreign carriers, to study the question immediately.

### Sudden Switch

Considering the fact that CAB has in the past repeatedly turned down proposals of Pan American World Airways to start such an operation in the Atlantic area, the Board's sudden support may seem somewhat surprising.

Actually, it all grows out of a problem which, in recent years, has seen hundreds of trans-Atlantic charter flights operated to the apparent detriment of certificated U. S. flag carriers during the summer tourist season.

Faced with this problem last summer, the Board adopted a policy under which over a hundred charter flights were authorized by special exemption orders. Similarly, so-called non-profit organizations acting as intermediaries between passengers and airlines were issued exemptions to act in a capacity not unlike that of forwarders of freight. U. S. lines participating were non-scheduled carriers or carriers not certificated to operate scheduled trans-Atlantic flights.

In addition, numerous charters were flown by foreign airlines such as British Overseas Airways Corporation, Sabena, El Al Israel, and others.

But all the while, U. S. flag lines operated their regular services at substantially higher charges with ample space available to handle all of the traffic which moved via charter flights.

Result was that CAB, in the fall of 1950, ordered its staff to conduct a thorough examination of the situation with the idea of coming up with not only a solution for the summer of 1951, but a long-range answer that would further the development of international aviation.

In this respect, the Board dispensed with lengthy procedural steps and through its Air Transport Examiner L. Orville Cameron conducted numerous informal conferences in which all interested parties were permitted to express their views. It proved less costly and resulted in the formulation of a Board policy based, in part, on the recommendations of the industry and the public.

### CAB's Program

To meet the immediate problem of trans-Atlantic charter operations during the coming summer, therefore, the following program was devised and will be followed by the Board:

- **No exemptions will be issued** for charter flights except in cases where the authorized trans-Atlantic carriers are unable or unwilling to provide the service;
- **So that adequate facilities** will be available to authorized carriers to meet demands for charter service, such carriers are urged to utilize equipment and personnel of other air carriers when necessary, thus preventing the need for purchasing additional aircraft for a seasonal operation;
- **Traffic to be carried will** be group-type traffic only, thus eliminating the solicitation by intermediaries of individual passengers; and,
- **No exemptions will be issued** to intermediaries or so-called "non-profit" organizations authorizing sponsorship of low-cost trans-Atlantic travel.

In substance, this means that CAB

**Luxury Service**— Luxury service such as this will be featured on the all-sleeper "Ambassador" flights to London and Paris which Trans World Airlines will add to its present trans-Atlantic services beginning April 6 and 7. Flights will have a limited capacity for maximum passenger comfort, the interiors of the TWA Constellations to be used having been fitted with 18 berths each, some of which may be reserved for double occupancy. Pre-dinner cocktails, champagne with full-course dinners and favors for women passengers will be other items of the luxury service. New service will be the only all-sleeper flights across the North Atlantic.

# Over the Counter

## Sales Promotion

**FRONTIER Airlines** is distributing on its airplanes and through its offices an attractive eight-page booklet, "Let's Become Better Acquainted," describing the company's routes and services . . . **Wisconsin Central Airlines** has a readable direct-mail piece promoting its DC-3's which recently replaced Lockheed Electras.

**Philippine Air Lines** is issuing a card that its trans-Pacific passengers will be proud to carry and show to their friends. The passenger is made a member of the "Celestial Order of the Vanishing Day" and the card states that he has "ascended swiftly into the skies and on extended wings has sped from yesterday into tomorrow. In crossing the 180th Meridian this mortal has cast aside the usual order of days accepted by time-burdened, earthbound creatures and so has joined this distinguished order of celestial beings." A nice memento and a clever sales-promoter.

The one and only airline to send out greetings on March 17, St. Patrick's Day, was—you guessed it—**Aer Lingus, Irish Air Lines,** Thanks to **J. F. Dempsey,** general manager, for the colorful green card . . . **Clive Adams, British European Airways'** North American representative, sends us a copy of the first system-wide BEA timetable to be distributed in the U. S. Very easy to read, it's to be issued four times a year.

**Continental Air Lines** won the "award of the year" for 1951 in the poster classification from the Denver Advertising Club. CAL was in competition with over 100 major companies in the Denver area. Winning poster features company's safety during winter travel and use of pressurized equipment . . . Continental has begun distribution of folders and promotional material designed to promote selected ranches and resorts in Colorado and New Mexico on a package basis . . . **United Air Lines'** direct mail campaign in Washington is playing up "to Chicago and back the same day!"

## Traffic and Sales Offices

**AMERICAN Airlines** and **Western Air Lines** have opened downtown ticket offices in the syndicate Building, 1420 Broadway, Oakland, Calif. . . . **Frontier Airlines** has opened its own ticket office, passenger and cargo station at Stapleton Airfield, Denver. Company's Denver station formerly had been consolidated with and operated by Continental Air Lines . . . **TWA** has started a remodelling program to double its passenger-handling capacity at Los Angeles International Airport.

## Traffic and Services

**THIS COLUMN** recently commended **National Airlines** for use of specially-colored baggage tags to speed handling and to expedite close-connection baggage. Now writes **Howard Zimdahl,** of **Capital Airlines** in Milwaukee, to ask if we didn't know that Capital "has used colored baggage tags for at least five years and that we have also had a close-connection tag in use for months. I'll be looking for Capital's recognition in one of your future columns." We hereby recognize Capital. Why, Howard, has your company kept it a secret for so long?

**TWA** will add a weekly deluxe all-sleeper "Ambassador" flight from New York to London and Paris starting Apr. 6 and 7. Premium charge on the flight is $10 above the fare, and berth charge will be $25 for single or double occupancy. TWA on Apr. 3 will start a once-weekly combination flight with both berths and seats on its New York-London-Frankfurt route. In early June flights will be increased to two weekly and a once-weekly combination flight will be added to Rome.

**Air France** is increasing spring and summer schedule to 12 New York-Paris flights per week . . . **KLM Royal Dutch Airlines'** summer schedule will be 10 weekly Constellation flights from New York and two from Montreal.

**Northwest Airlines,** which on Mar. 17 withdrew all Martin 202's from service for modification, has changed schedules as follows: (1) Stratocruiser flights Twin Cities-New York increased to three round-trips daily, (2) New York operations consolidated at Idlewild, (3) Stratocruiser service at Milwaukee, Detroit and New York supplemented with DC-4's and Seattle Tacoma and Spokane served with DC-4's in addition to transcontinental Stratocruisers, (4) DC-4 service on eastward segment to Rochester, Madison, LaCrosse, Cleveland, Pittsburgh and Washington, (5) DC-4 service on westward segment to Fargo, Grand Forks and Winnipeg as well as Jamestown, Bismarck, Miles City, Billings, Great Falls, Butte, Missoula, Portland and Yakima.

**Philippine Air Lines** last month inaugurated once-weekly DC-6 sleeper service between Manila and Tokyo via Okinawa . . . **West Coast Airlines,** local service carrier, has instituted the half-fare family plan on its system . . .

—ERIC BRAMLEY

will go all out in an effort to see that whatever type of traffic that moves this Summer will be carried by the authorized trans-Atlantic carriers wherever possible. .

For the long-range answer, however, CAB has come up with the scheduled air coach suggestion. Board said it is convinced that a substantial number of the passengers carried on the flights operated pursuant to the 1950 exemption policy would have traveled regular service had it not been for the great differential in fares.

## Wide Fare Spread

The standard round-trip fare between New York and London, for example, is $675. The round-trip fare for "charter" services between the same points is anywhere from $223 to $414.

Initially, any coach program in the Atlantic area would be on an experimental basis probably limited to seasonal operations. It would, of course, involve lower fares which would reflect definite savings on the part of the carriers.

These savings, CAB reasons, must result from operational economies, high density seating, increased utilization of equipment and personnel, improved load factors, curtailed passenger service, and "other such economies." Generally, the standards are similar to those adopted two years ago for operation of transcontinental coach services by American and TWA with DC-6 and Constellation aircraft.

The inherent problems in a new international operation, however, lead to the conclusion that comprehensive data must be assembled and careful study be given prior to the establishment of the proposed service. Thus, the Board said it does not appear feasible to sponsor any such service for the 1951 summer season. But the door has definitely been opened.

## US Carriers Differ

Heretofore, the two U. S. carriers flying the Atlantic—Pan American and TWA—have been divided on the coach question with PAA favoring and TWA opposing.

Pan Am says a limited coach service "would afford a solution to the demand for low-rate air transportation across the North Atlantic which is again pressing itself . . . and which will result in such service of some sort being offered. It would prevent the irregularities and improper treatment of travelers which were the inevitable results of the 1949 and 1950 exemption programs. It would give the revenues from this business to the scheduled airlines rather than have these diverted to irregular car-

riers who recognize no common carrier obligations. It would provide a test of the validity of a tourist program which would be of value in future years."

TWA, on the other hand, argues that "the airlines' ultimate ability to become self-supporting and to reduce fares is dependent on using the seats that are presently flown empty. Increasing the volume of travel by adding only to the peak volume will injure rather than help the airlines."

## Defense Considerations

From a national defense standpoint which, in these times, could be a controlling factor, the nod is in favor of trans-Atlantic coach operations. Experts reason that such services would develop new traffic which, in turn, if of sufficient volume, would support additional planes thereby providing a reserve airlift to meet the needs of national defense in the event of a more extreme international situation.

It must be remembered that the action taken by CAB in this matter will have substantial influence on governments of foreign countries. Many of these would welcome scheduled low-cost operations. Consequently, inauguration of such services across the Atlantic by U. S. lines in the next six to twelve months could mean world-wide expansion by the summer of 1952.

## CAB CALENDAR

**Apr. 3**—(Docket SR-7-201) Oral argument before the Board in Civil Aeronautics Administrator vs. Aviation Corporation of Seattle d/b/a Westair Transport. 10 a. m., Room 5042, Commerce Building, Washington, D. C. Postponed from March 6.

**Apr. 10**—(Docket 3397 et al.) Oral argument before the Board in Transcontinental Coach Type Service Case. 10 a. m., Room 5042, Commerce Building, Washington, D. C.

**Apr. 16**—(Docket 3945) Hearing in Aero Finance Corporation Individual Exemption Case. Tentative.

**Apr. 17**—(Docket 2737 et al.) Oral argument before the Board in the Free and Reduced Rate Transportation Case. 10 a. m., Room 5042, Commerce Building, Washington, D. C.

**Apr. 23**—(Docket 3868) Hearing in Peninsular Air Transport Individual Exemption Case. Tentative. Examiner William F. Cusick.

**May 1**—(Docket 4834) Hearing in KLM Royal Dutch Airlines trans-Atlantic Permit Amendment Case (add Boston and extend route from New York to Curacao). Tentative. Examiner Thomas L. Wrenn.

**May 15**—(Docket 4656) Prehearing conference in Houston-Pittsburgh-New York Interchange Case (Trans World Airlines/Chicago and Southern Air Lines). 10 a. m., Room 5040, Commerce Building, Washington, D. C. Examiner William F. Cusick. Postponed from March 19.

**May 15**—(Docket 4579) Hearing reconvened in Samoan Area Case. Tentative. Recessed from March 12.

**June 4**—(Dockets 2849 et al. & 3663) Hearing in Big Four Mail Rate Proceeding and Efficiency Investigation. Tentative. Examiner Edward T. Stodola. Postponed from April 2.

Symbols
of Delta Service
Colonel Delta
Dottie Delta
Along with Spring in the South, two little figures are appearing on Delta ticket counters all over the system.
Let us introduce Dottie, the Delta stewardess, whose friendly smile and helpful attitude are typical of Delta's alert passenger service. The spry looking gentleman with the handlebars is Colonel Delta, an enthusiastic passenger who sells Delta wherever he goes.
Delta
AIR LINES
General Offices: Atlanta, Ga.

# Airline Commentary

**By Eric Bramley**

WE'VE BEEN browsing through a very interesting collection of publications. It's called "The First Ten Years," and is a random selection of airline guides from 1929 to 1938, compiled by American Aviation Publications, which now publishes *Official Airline Guide* (don't write for a copy of the collection—they're all gone).

Vol. 1, No. 1, of *The Official Aviation Guide* appeared in January, 1929, and consisted of 22 pages. March, 1951, issue of *Official Airline Guide* carried 368 pages. In 1929, you could zoom from Los Angeles to San Francisco in four and one-half hours for $54 one-way. Today you can do it in 1:45 for $24.21 regular fare, including tax, or $13.46 coach.

Recognize these names from Vol. 1, No. 1? General traffic manager of National Air Transport was **Ray Ireland,** now vice president-traffic administration of United Air Lines. NAT's auditor was **Curtis Barkes,** now UAL's vice president-finance and property. **E. P. "Bert" Lott** was NAT's operations manager—he's now UAL's director of flight dispatch and just received his 25-year pin. **Clarence Fleming,** vice president of TWA, was manager of NAT's Kansas City division traffic office, while **Tom Wolfe,** president of Pacific Airmotive Corp., headed the Chicago division office.

In Pan American Airways, we find that the president was **J. T. Trippe,** (he hasn't progressed . . . he's still PAA president). **A. A. Priester** was chief engineer, now vice president and chief engineer. Thompson Aeronautical Corp.'s traffic manager was a young fellow named **Charlie Rheinstrom,** later vice president-traffic of American Airlines, presently with J. Walter Thompson advertising agency. Lieut. **Jack Frye** was president of Standard Air Lines (later TWA president, now head of General Airline), and Lieut. **Paul Richter,** now deceased, was vice president-treasurer.

C. C. Moseley, present board chairman of Grand Central Aircraft Co., was vice president of Western Air Express. **O. C. "Rich" Richerson,** who retired on Jan. 1 as United's manager of ground services after 23 years' service, was San Francisco field manager for Boeing Air Transport. **W. P. "Bill" Hoare,** who was BAT's Chicago field manager, is now United's general manager-maintenance. And the chief pilot of Texas Air Transport was **Tom Hardin,** later with American, later commanding general of Air Transport Command's India "Hump" operations, now an Air Force brigadier general.

There are many more familiar names. A lot of people have grown up with the industry.

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*We want to thank those readers who have sent us checks for the Mary Frances Housley Memorial Fund. Your contributions are greatly appreciated. They have been forwarded to the officials of the fund. In case you didn't see the story a couple of issues ago, a fund has been started to honor Frankie Housley, the National Airlines stewardess who lost her life in the Philadelphia accident in January, trying to save the life of a child. Proceeds will be used to erect a nurses' home at Variety Children's Hospital, Miami, which is dedicated to saving the lives of children. You can still contribute. If you can spare a buck or two for a very worthy cause, make a check payable to C. B. Chinn, treasurer of the fund, and send it to us at 1025 Vermont Ave., Washington 5, D. C. We'll forward it to the proper authorities.*

•

Ed Bern, sales manager of Pan American-Grace Airways, tells us that he's heard of a lot of unusual requests in this airline business so he wasn't too surprised at a recent inquiry. Seems that 12 midgets were arriving in Buenos Aires from Germany and wanted to fly Panagra to Santiago, Chile. The query was whether Panagra would accept the midgets at half fare while charging full fare for their three grown-up companions. The midgets, it was explained, weighed only 23 kilos per head. Panagra's answer was that they were so sorry, no can do—it's necessary to abide by a tariff. (Now maybe someone will file a tariff covering midgets!).

## AIRLINE PEOPLE

### ADMINISTRATIVE

**Ray W. Ireland,** United Air Lines vice president-traffic administration, recently was presented with a diamond-studded gold service pin marking the completion of his 25th year of service with UAL and its predecessor company, National Air Transport. Ireland joined NAT in the spring of 1926 as traffic manager, and was named to the same post with United in 1932. He became a vice president in 1945.

**Robert J. Smith** has returned to his post as president of Pioneer Air Lines in Dallas after serving for seven months as vice chairman of the National Security Resources Board.

**Joseph D. Ryle,** formerly European director of public relations for American Overseas Airlines, has been appointed director of public relations for American Airlines, filling the vacancy left earlier this year by the resignation of **Ben Wright.** Ryle recently had served as eastern regional public relations director for AA in New York.

**A. J. Beverett** has been named staff assistant to **H. E. Nourse,** vice president-economic controls of United Air Lines. He joined UAL in 1946 as a budget analyst in Chicago and two years later was transferred to the Denver operating base.

**Ralph W. DesRochers** has been appointed personnel manager of Southern Airways, with headquarters at Atlanta Municipal Airport.

**Robert C. Heyda,** who joined Frontier Airlines in May of last year to organize its public relations program, has been recalled to extended active duty with the Fifth Army at Chicago. He left Frontier on April 1.

**F. Lestrade Brown** has resigned as government relations representative of Pan American World Airways' western European region and has joined American Export Lines in Genoa, Italy. He was director of European governmental affairs for American Overseas Airlines before the PAA-AOA merger last summer.

### OPERATIONS-MAINTENANCE

**Earl A. Bostelmann,** formerly superintendent of communications with Southern Airways, has been promoted to superintendent of stations and communications. A 20-year veteran in the air transport industry, he was with American Airlines from 1931 through 1936 and subsequently served with capital Airlines and Florida Airways.

**D. L. McDaniel,** formerly office manager at United Air Lines' Cheyenne training center, has been promoted to technical training manager at San Francisco. He succeeds **W. P. Herriott,** who has become assistant district personnel manager in San Francisco.

**David G. Desmond** has been appointed to the newly created position of sector chief pilot for Pan American World Airways in Miami. He had been assistant chief pilot in Miami prior to the creation of the new post.

**J. H. Gehlsen,** formerly station manager for Trans-Canada Air Lines at Tampa, has been named Florida manager, representing TCA on operational and traffic matters in Florida and in Cuba.

**E. J. Phillips,** formerly in charge of California School of Aircraft Instruments and before that an instrument instructor with the USAAF, has been appointed instrument instructor for Philippine Air Lines at Manila.

## TRAFFIC & SALES

**Webb J. Disney** has been named manager of tours, group movements and conventions for American Airlines de Mexico. He returns to the airline after three years in hotel public relations work in Mexico.

**Thomas B. Cavanaugh** has been appointed Hawaiian district sales manager for Trans World Airlines, with headquarters in the Alexander Young Hotel in Honolulu. A member of TWA's sales staff in Los Angeles since 1945, Cavanaugh succeeds **William C. Kelley,** resigned.

Klapp

**J. M. Klapp,** superintendent of government sales for United Air Lines the past 13 months, has been named to the newly created post of superintendent of government and convention sales, with offices at the company's headquarters in Chicago.

**Paulette E. Reagan** has been appointed Florida representative of SABENA Belgian Airlines, with offices at 235 Lincoln road, Miami Beach.

**Larry Murphy,** former manager of public relations for Trans World Airlines in Philadelphia and Pittsburgh, has been transferred to San Francisco in a like capacity.

**Richard C. Fernald,** former Chicago district publicity manager for United Air Lines, has been named assistant to **Richard M. Rummel,** manager of publicity.

**H. N. Canaday,** formerly with American Airlines in New York, has joined Air Cargo, Inc., as director of cartage services. He replaces **George McNeill,** transferred to Chicago to replace **S. W. Taylor,** resigned, as western regional manager for ACI. **James G. Erwin,** formerly with Capital Airlines in Washington, has been named assistant to Canaday.


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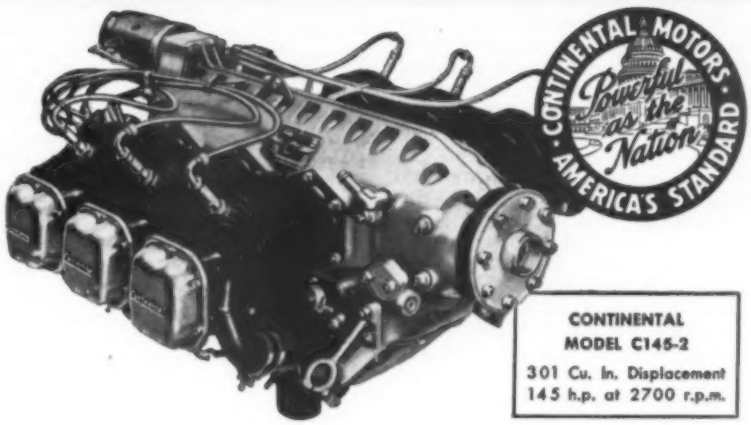


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# Growing Detroit-Wayne Major . . .

## . . . Candidate for Motor City's Primary Commercial Airport

*By* KEITH SAUNDERS

LEROY C. SMITH, Wayne County (Mich.) Road Commissioner, predicted when the old Wayne County Airport was renamed Detroit-Wayne Major Airport that the field eventually would become the major commercial airport for Detroit and Wayne County.

It appeared for a good while that Smith was out on a limb with this prediction, but recent events indicate his airport may indeed become Detroit-Wayne's major airport.

For Wayne County is building an airport that will have few equals in the country, and barring the possible construction of a brand-new multi-million dollar airport much closer to downtown Detroit than either Willow Run or Wayne Major, the latter will undoubtedly emerge as the city's air terminal.

### U. S.-Canada Project Fails

Detroit's long-held aspirations for a close-in airport were quashed again a fortnight ago with the disclosure that negotiations between U. S. and Canadian officials looking toward the possibility of developing an international air terminal on the Canadian side of the Detroit River some 10 or 15 minutes from downtown Detroit had been "washed out."

This left Detroit with these alternatives:

1. **Continue** to receive scheduled air service through far-out (28 miles) Willow Run Airport;
2. **Build** a new airport from scratch at some location within 8 to 10 miles of the city's business section; or
3. **Abandon** Willow Run in favor of Detroit-Wayne Major.

The principal advantage of (1) is that Willow Run, developed during the war in connection with the Ford bomber plant, is one of the finest airfields in the country, with fine runways and taxiways, unobstructed approaches and generally favorable meteorological conditions.

### Nullifies Air Savings

Its big disadvantage is that it is nearly an hour's drive from downtown Detroit, thereby largely nullifying the advantage of air travel between Detroit and such cities as Cleveland, Chicago and Pittsburgh, and making it impossible for the airlines to exploit Detroit's air traffic potential.

Alternative No. 2 poses even more serious problems. With Canada ruled out, the likelihood of finding a close-in site is somewhat diminished. Any site in the metropolitan area of the city would be costly and difficult to obtain. There has been some talk recently of trying to acquire the 1,369-acre Ford estate in Dearborn, which was put on the market recently at a price of $2,600,000, but Dearborn city officials are opposing the suggestion.

There also is a question as to whether CAA, which has put close to $3,000,000 into the development of Wayne Major and a lot of money into Willow Run, will be willing to invest several more millions of Federal funds in a new airport which would serve no purpose except to save Detroit air passengers 20 minutes or so of surface travel time.

In view of CAA's current policy of building large new airports only in cases where they will be of real aid in the defense effort, it would certainly take a hard look at any project calling for construction of a new airport anywhere from 8 to 12 miles from downtown Detroit.

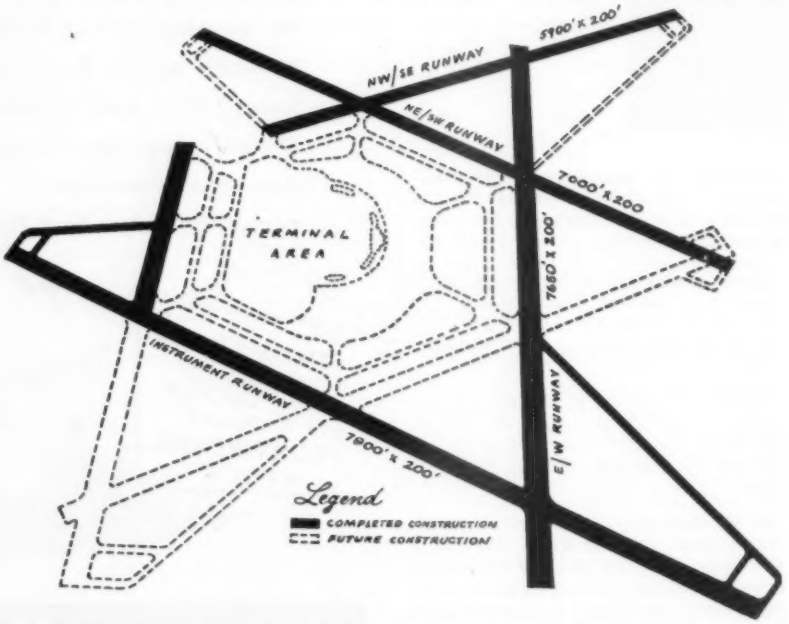
Chief disadvantage of alternative No. 3 is that Detroit-Wayne Major is still a long way out (about 18 miles and 40 minutes' limousine time), and the airlines would be most reluctant to assume the headache and expense of relocation merely to save 20 minutes or so of surface travel time.

Moreover, the airport is county owned and controlled, and Detroit city officials would be reluctant to have the city's air terminal under county rather than city control. By the same token, the county could not be expected to look with favor upon giving Detroiters any major voice in the operation of its airport.

### Closer to Detroit

Principal advantages of the field is that it is closer in than Willow Run and, with a few more improvements, it will have a capacity exceeding all but one or two airports in this country and sufficient to meet Detroit's needs for many years to come.

The runway layout of the field, consisting of three pairs of parallel runways, is planned to provide safely for some 240 plane movements every hour under ordinary operating con-




**Runway Layout**— With two pairs of parallel runways nearly completed, and one strip of a third pair paved and lighted, Detroit-Wayne Major Airport soon will have a runway layout which few civil airports will be able to match and an aircraft acceptance rate almost unsurpassed. Construction in terminal area will start this spring.

ditions, or 5,760 movements in 24 hours.

Detroit's efforts to find a suitable location for a new airport date back to just before World War II, when it was apparent that the Detroit City Airport would be outgrown in a matter of a few years and would not be capable of expansion.

It was proposed at one time to locate a new airport in nearby Macomb county, and this even went as far as condemnation proceedings, but the project had to be abandoned under a flood of opposition, principally from the aviation authority, which was conducting an airport survey at the time. This aborted project cost the city some $83,000 in fees and expenses.

Then public-minded citizens formed a committee and raised $800,000 in private funds to buy a site northwest of the city, but after a bitter fight which raged for more than two years, this proposal also met with defeat.

After months of study, the aviation authority finally came up with a recommendation for development of an airport on a 1,900-acre tract in the county, but it met with opposition, political and otherwise, and had to be discarded, as had been its predecessor proposals.

### Expansion Program

Meanwhile, the Wayne County Airport, which earned a mere "honorable mention" rating in the aviation authority's $56,000 survey report, has gone steadily ahead with a program of far-reaching expansions and improvements until it stands today as one of the nation's top airports in many respects.

The original Wayne County Airport, known during the war years as the Romulus Army Air Base, comprised only one square mile of land. After the war, the Board of County Road Commissioners, which has airport matters under its jurisdiction, caught some of LeRoy Smith's enthusiasm and acquired, at considerable cost and after a hard fight, sufficient additional land to make up a site of approximately three square miles in area.

The county then, in 1947, got its airport included in CAA's Federal Airport Program for an ambitious expansion and improvement program totaling $6,651,828, of which $3,792,064 would come from county funds and bond issues. Since then things have been happening at the renamed Detroit-Wayne Major Airport.

A boundary fence has been installed, drainage and sewer systems have been constructed, the field has been cleared, grubbed, graded and turfed, runways and taxiways have been paved, lighting has been put in, and now work is about to start on a

## AIRPORT NEWS DIGEST

**More Activations:** Air Force's new program of activating 28 additional air bases to provide temporary training facilities for air national guard units called up for active duty is nothing for airport people to worry about. It's mostly a "paper" transaction, since the guard units all along have been using the bases for part-time training, and activation of the bases will permit them to continue training on a full-time basis at their home stations until regular AF bases can be made ready for them. Bases affected by the program, which began last fortnight, are:

Memphis (Tenn.) Municipal; Birmingham Mun.; Will Rogers Airport, Oklahoma City; Key Field, Meridian, Miss.; Holman Field, St. Paul, Minn.; Sioux Falls (S. D.) Mun.; Philadelphia International; New Orleans Airport, Van Nuys, (Calif.) Metropolitan; Berry Field, Nashville; Brainard Field, Hartford, Des Moines Mun. and Sioux City (Ia.) Municipal.

Also Westchester County (N. Y.) Airport; Lambert-St. Louis Mun.; Jefferson Barracks, Mo.; Capital Airport, Springfield, Ill.; Gowen Field, Boise, Idaho; Gore Field, Mont.; Byrd Field, Richmond, Va.; Hector (N. D.) Airport; Lockheed Air Terminal, Burbank; Mercer (N. J.) Airport; Buckley Field, Colorado; Cheyenne (Wyo.) Mun.; Salt Lake City Mun.; Midway Airport, Chicago, and Rosecrans Field, St. Joseph, Mo.

• **CAA's regulations Sec. 550.3 (a) have been amended** to provide that Federal-aid airport grants based on the value of donated land will not be made unless the project sponsor has accomplished or agreed to accomplish other items of airport development or construction at an expense to the sponsor equalling or exceeding the government's share of the estimated value of the donated land.

• **Air Coordinating Committee's** Airport Use Panel held public hearings last fortnight at New Orleans and Lake Charles, La., on civil-military joint airport use problems in the area, stemming from an AF request for exclusive use of the Lake Charles Army Air Field.

• **Maj. Gen. Robert W. Harper, commanding general** of the USAF's Air Training Command, has promised full cooperation of his command with civil and commercial operators at airports designated for joint civil-military use.

#### TERMINAL AREAS, BUILDINGS

• **Contracts totalling $675,000 for improved** facilities for the handling of passengers at New York International Airport have been let by the Port of New York Authority.

• **Plans and specifications for improvements** estimated to cost $1,384,000 for the Quad-City (Illinois) Airport have been completed and work will be started this spring. A $750,000 terminal is included.

• **CAA has reversed previous decision to withdraw** a $650,000 Federal-aid grant for use on proposed $2.5 million administration building at Houston Municipal.

#### AIRPORT BONDS, REVENUES

• **Los Angeles City Council has officially approved** placing a $14,500,000 bond issue proposal for L.A. International Airport on the ballot at the municipal election May 29.

• **Salt Lake City has signed new airport use contracts** with three airlines assuring it of $100,000 annual income instead of the $60,000 heretofore received. Rebates of three cents out of the 4c tax on each gallon of aviation gasoline the airlines purchase at the airport will apply against the new guarantees.

• **Revenues of Port Columbus (O.) municipal airport** during 21 years of operation have totaled $499,532 and operating expenses $498,268, according to a recent report.

—KEITH SAUNDERS

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## AIRPORTS

cargo building and first-stage construction of a terminal building.

### New Runway Completed

Completed late last year was the 7,900-foot NE/SW instrument runway (R21, L3), on which high-intensity lighting is now being installed and an Instrument Landing System is slated for installation later this year. Also completed is a parallel NE/SW strip (L21, R3), which is 7,000 feet long and 200 feet wide, and on which medium-intensity runway lighting has been installed.

Another runway that has been paved and lighted is the 7,650-foot E/W strip (R9, L27), and the east end of a parallel runway (L9, R27) has been paved. Also paving has been completed and lighting installed on a NW/SE strip (R33, L15) that is 5,900 feet long and 200 feet wide. And the approaches have been cleared for a parallel strip.

With completion of the paving of L9, R27 and the paving of R33, L21, Wayne Major will have three sets of dual parallel runways and a fine system of connecting taxiways.

Additional lighting, installation of electronic landing aids, the paving of access roadways and development of the terminal area, all possible within the next 18 months, will make Detroit-Wayne Major Airport into an airfield that the airlines serving Detroit will find inviting.

Meanwhile, the Detroit Industrial Expressway is being pushed eastward from the airport toward the city of Detroit, and through connections with the Edsel B. Ford Expressway and the John C. Lodge Expressway could bring the airport within 20 to 25 minutes of downtown Detroit in another year or two.

## AIRPORT PEOPLE

**William T. Harper**, formerly a traffic controller at Akron, Ohio, has joined the air traffic control staff at Dress Memorial Airport, Evansville, Indiana.

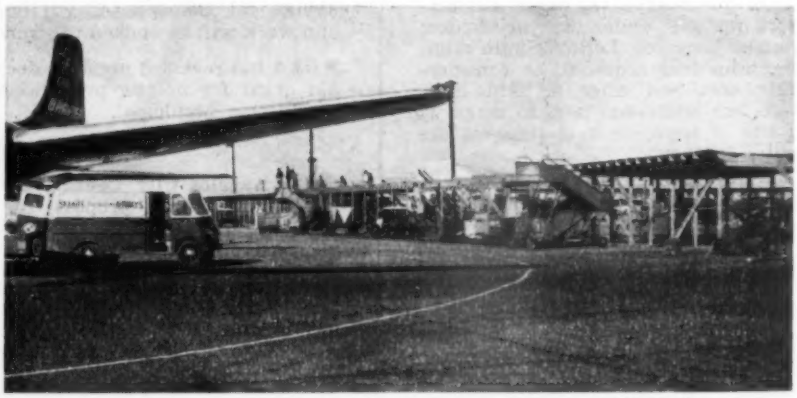
**Cedric Hoskins** has been named assistant airport manager at Sioux City, Iowa. He will probably take over the operation of the field if **Richard Wolf**, airport manager and an active Air Force reservist, is called back to duty.

## CAA AIRPORT GRANTS

For the three weeks ended February 28, Federal-aid airport grant offers totaling $1,053,229 were made by the Civil Aeronautics Administration to 17 communities, as follows, with airport class in parentheses:

**Arkansas:** Batesville Municipal (2), $8,236.
**Arizona:** Bisbee-Douglas Airport (6), $16,157 (two projects).
**California:** Los Banos Airport (2), $5,577.
**Colorado:** Trinidad Mun. (3), $16,000.
**Florida:** Pensacola Mun. (4), $106,685; Imeson Airport, Jacksonville (6), $7,000.
**Georgia:** Atlanta Mun. (7), $793,000.
**Idaho:** Bear Lake County Airport (3), $5,826.
**Kansas:** Atchison Mun. (2), $9,500.
**Louisiana:** Shreveport Mun. No. 2 (5), $16,065.
**Maine:** Houlton Mun. (4), $6,400.
**Mississippi:** Natchez Mun. (4), $6,672.
**Nebraska:** Kearney Mun. (6), $11,000.
**North Carolina:** Goldsboro Mun. (4), $8,000.
**North Dakota:** Cando Mun. (1), $4,600.
**Ohio:** Toledo Mun. (4), $5,000.
**Oklahoma:** Guymon Mun. (1), $27,511.

These boosted to 1,657 the total of grant offers made under the Federal Airport Program, and increased to $136,702,151 the amount of Federal funds involved.



**Love Field Shelter**—Construction is in progress at Love Field, Dallas, on a covered walkway extending 410 feet from the north concourse of the terminal building to the farthest loading gate. Walkway and three shelter houses are being constructed by Braniff Airways for the comfort and convenience of airline passengers at Love Field. Braniff will allow the five other certificated airlines serving Dallas to use the new facilities.

TRAINING ROLE FOR AGRICULTURAL AVIATION:

# Insect Control Skills Needed Under Point IV Aid Program

By BARBARA J. WARD

AN IMPORTANT development in aviation has taken place with no fanfare and with only a few people aware that it has occurred.

The State Department's Technical Cooperation Administration has begun to underwrite "technical assistance" to underdeveloped countries under the Point IV Program. Realizing the implications, CAA recently conferred with Department of Agriculture personnel and has put its Program Planning office to work outlining the possible uses of aircraft in such a program. The agricultural airplane can become a powerful potential weapon for peace.

The United States is well equipped for the offensive against insects and disease. Approximately 5,000 aerial applicators were registered in 1950 but few have contracted for overseas operation. The countries which comprise the best targets for aerial attack against insects and crop-killing weeds remain virgin territory.

Operators have had the tools and the science, but the money has not been there. Lack of foreign exchange in dollars and the risk of conducting business under unpredictable foreign governments have confined U. S. agricultural operators within their own national boundaries.

## Changing Picture

Point IV changes the picture. Public Law 535 of the 81st Congress authorizes exchange of technical knowledge and skills, which may include but need not be limited to "economic, engineering, medical, educational, agricultural, fishery, mineral, and fiscal surveys, demonstration, training, and similar projects that serve the purpose of promoting the development of economic resources and productive capacities of underdeveloped areas."

Dr. Henry G. Bennett, who is a former president of the National Flying Farmers Association, took over as administrator in December, 1950, and projects are now beginning under the $34,500,000 appropriation with additional funds anticipated.

This is not a give-away project. Point IV would not, for instance, finance an American operator in spraying the Belgian Congo for malarial mosquitoes, desirable though that may be.

But it would finance the transfer of knowledge and skill. TCA can contract with an agricultural operator to go to a foreign country which has requested the assistance to show foreign nationals how to convert aircraft for spraying and dusting, to train them in the specialized job of selecting and handling chemicals, and to demonstrate aerial spraying and train foreign pilots in agricultural flight techniques. This could include training of helicopter pilots and maintenance technicians needed in such an operation.

In addition, it is possible that private firms which will take on such assignments may have their investments guaranteed by the U. S. government. Such legislation was introduced in the 81st Congress, was passed by the House only, and is expected to be re-introduced in this session. It would in effect provide a government "bond" against expropriation and would insure conversion of profits from other currencies back into dollars.

Point IV is a program for introducing advanced ideas and skills where they are not known. In this program, airplanes have their place; not only because they can do a job, but because they provide the fastest way to get it done.

## Greek Malaria Control

Already, in Greece, aircraft have proved effective in wiping out malaria. In 1942 there were at least 2,000,000 cases of malaria in the country. In 1946, UNNRA pioneered a large-scale aerial campaign against mosquitoes in Greece, which was continued by ECA.

Airplanes of the Greek Air Force were equipped with chemical containers and spray booms and sprayed thousands of communities and malarial areas with DDT. In 1948, there were only 50,000 cases of malaria, giving an estimated saving of 60,000,000 man-days of work a year—the equivalent of adding 200,000 workers to the labor force without the addition of more mouths to feed.

In India, the loss of wages plus expenses for medicine have been estimated at $2 per capita per year. This does not include the loss of work output or the depression of agricultural production due to malaria. In Ceylon, the 20 cents per capita recently spent by Ceylon in dusting the island with DDT to reduce malaria has given an estimated immediate

EACH SMALL flag on the map of Greece represents a community sprayed with DDT in a war against malaria. Aircraft sprayed several thousand communities to reduce the incidence of malaria from 80% to 5% in some areas, in the first large-scale aerial project of its kind.

## *Laurence Arpin leads double life*

It's a double *business* life, of course. Mr. Arpin operates a heavy-grading contracting firm on the West Coast, also sells a variety store product all over the U. S. "Managing *two* businesses is possible because of the extra working hours provided by my Bonanza," says Mr. Arpin. "This plane has *doubled* my earning ability.

"Now, after three years of ownership, I realize that not only can I afford the Bonanza—I can't afford to be without it."

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tenfold return, without counting increased agricultural output.

### Good for Open Areas

Spraying from aircraft is most effective over wide, open areas such as water-filled rice paddies. Buildings and shielded areas must be sprayed by hand as a supplement to the aerial operation. Such a program can wipe out all insect-borne diseases, which include: certain forms of dysentery which are carried on the feet of flies; yellow fever, carried by the Aedes Aegypti mosquito; jungle yellow fever; malaria; cholera; plague, which is carried by fleas on rats; dengue, and typhus, which is carried by lice.

Some insects may become immune to DDT and require the use of chemicals such as Gamaxene. Typhoid, carried by drinking water, has been wiped out by dropping chlorine from aircraft into the water supply, although usually the water area is small enough so that clorine can be dumped from boats.

Legislation before Congress to provide 2,000,000 tons of grain for India might not have been necessary if agricultural aircraft had been available in India this past year. Floods, droughts, and plagues of locusts killed off the crops.

### Grasshopper Project

The largest grasshopper war ever attempted in agricultural aviation has been conducted by our western states in the Montana, Colorado, Wyoming vicinity to cover 5¼ million acres of range land. Last year, Wyoming alone baited 2,462,320 acres with 11,415 tons of poison bran. Some 41 aircraft baited 60,000 acres a day at a cost of 58c per acre. Over $500,000 was paid to the contractors.

The Wyoming Aeronautics Commission recommends that new concentrate poisons which are more economical be used in the future. Aldrin is reported to be effective in killing grasshoppers and to require only about two ounces per acre.

In addition to killing insects, aerial chemicals can kill off weeds in crops. 2,4-D will kill broad-leafed weeds without harming grasses such as rice. "The Curse of Bengal," the water hyacinth in India which spreads in spite of every effort to control it, undoubtedly could be wiped out and crop output effectively increased. Where ground vehicles for spraying cannot operate in the water-deep rice, aircraft can cover it. Yet, in 1950, not one aircraft was employed in agricultural work in India.

One of the most promising projects in plant-killing chemicals is under way at Texas Agricultural Station No. 7 where 15,000 acres of mes-

## THE Washington View

**By Barbara Ward**

WITH aviation representatives and state defense officials trying to decide how lightplanes will fit into the defense set-up, it's good news that Civil Defense Administration is establishing an aviation office under its Transportation Division. CDA is trying to "borrow" a CAA official to head the office responsible for use of civil aircraft during a war emergency.

Establishment of a working plan, however, actually will hinge on Air Force and Air Defense Command decisions of when lightplane should be grounded and how long they're down. During possible bombing activities, the Air Force probably will want the skies clear. So, in the final analysis, it's the Air Force thumb that the operator has to worry about. All the planning of CAA and aviation committees could be vetoed.

In the meantime, Michigan is an example of a state which has gone ahead with its aviation defense planning. It has established an organization of 28 separate Civil Air Mobile Defense Units of about 100 aircraft each, comprising about 2,802 aircraft, 5,011 pilots, 162 aviation schools and 243 airports and landing fields.

•

*Nothing is more ludicrous than to find a government agency intent on protecting the public from the facts. For the past year, CAA has been asking airplane owners and operators to send in malfunction reports on anything that goes wrong with an aircraft, from a broken door handle to a bent magneto drive shaft. About 3,000 persons have cooperated. But so far as most of them are concerned, the MR's might have fallen into a waste basket. They don't even get a post-card acknowledging receipt of the report.*

*The only people who get the results of these malfunction reports—a summary of points to be on the look-out for—are CAA designees. If you are a private aircraft owner or just an A & E mechanic, you attach yourself to a CAA designee. If you're a reporter, you get told it isn't public information.*

*It also is CAA policy to withhold overall accident rates on the various makes of aircraft. The theory is that the information might be misused. The public might be scared out of flying and if they knew the Arizona Ark had a higher accident rate in marginal weather than the Cessna 140, they just might not fly it in marginal weather. Or they might not buy it.*

*Actually, this policy protects several individuals. It protects the inferior manufacturer and it protects the inferior CAA official who gives him a type certificate for his inferior aircraft. We happen to be of the opinion that the lightplanes on the market today are good airplanes. Beech, Ryan, Erco, Cessna, Piper, the whole list of them have done a lot to build private aviation. When they see a weakness in their products, they do their best to correct it. Most aircraft manufacturers will not only stand behind their products but, like Mr. Piper, they'll fly them.*

*The public can take care of itself. Now, just whom is CAA protecting?*

•

During World War II, all air markers within 150 miles of the Atlantic and Pacific coasts and in strategic areas were painted out, but in the future, it appears that they will stay put. The Air Coordinating Committee, the National Association of State Aviation Officials, and **Wiley Wright,** director of CAA's Office of Aviation Development, all have stated that air marking should continue.

But the activity is dropping, from 2,271 new air markers in 1948 to 1,621 in 1949 and 1,144 in 1950. Alabama led all the states with 141 new air markers in 1950, followed in order by Nebraska, 140; New York, 125; Wisconsin, 118; Florida, 113; Minnesota, 109; and Ohio, 94. State aviation commissions put in most of the new air markers, assisted by the "99" women pilots who put in 82 in Ohio, and by Chambers of Commerce, boy and girl scouts, fire departments, forest services, manufacturers, ranch owners, Civil Air Patrol, airport operators, airport boards and flying services. It needs more work: you can still fly from coast to coast and never see an air marker.

quite have been treated with chemicals to kill and rot it so that land can be plowed. Previously, bulldozers and heavy chains dragged behind tractors have attempted to root it out, but with a reported 115,000,000 acres of land infested, land vehicles are slow and expensive. If a successful chemical is found, large areas of Pakistan, Iran, Iraq and India might likewise be rendered usable.

### Pasture Planting

Some 15,000 acres of dust bowl were seeded by aircraft in Kansas in 1950 with sand lovegrass, in an attempt to return it to pasture land. Seed hoppers were installed behind the pilots and the aircraft flew at about 50 feet above the ground while dropping seed through wide-mouthed chutes. In California, 98% of the 1950 rice crop was seeded by air and Australia is experimenting with aerial sowing of pre-germinated wheat to allow earlier harvests.

Effectiveness of aircraft was demonstrated by the C-46 converted to spray insecticide by a New England operator last summer. It put down a 600-foot swath and sprayed 200 acres per operating minute.

The following countries which to date have concluded Point IV agreements: Colombia, Dominican Republic, Cuba, Brazil, Lebanon, Paraguay, Chile, Libya, Pakistan, Costa Rica, Panama, Ceylon, Afghanistan, Liberia, Peru, and Nepal.

Already an aerial survey for possible water sources has been conducted by a civilian contractor in Arabia under Point IV funds and another country has requested helicopters for an aerial survey. The only limits to future projects will be those of human imagination and ingenuity.


WORLD'S PREMIER AIRPLANE FABRIC

lighter stronger smoother

FLIGHTEX

FLIGHTEX FABRICS, Inc. · 93 WORTH STREET · NEW YORK 13, N.Y.

Leading Manufacturers of Fabric and Tapes for the Aircraft industry.

FLIGHTEX FABRIC

Export Representative AVIQUIPO, Inc. 25 Beaver Street, N. Y. Cable: Aviquipo


## the bulletin board

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**Displayed Advertising:** $10.00 per inch for less than 15 inches in one issue or in any 12-month period. For more than 15 inches, $8.50 per inch; more than 30 inches, $8.00; more than 60 inches, $7.50; more than 90 inches, $7.00; more than 120 inches, $6.50. Space units up to full pages accepted in this section for classified-type advertising.

Forms close 20 days preceding publication date. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Ave., N. W., Washington 5, D. C.


**For Sale—Aircraft Parts**

West Coast's largest stock of Douglas, Constellation, AT6, P51, and C46 parts; P&W, Wright engine parts and accessories. Complete stock AN hardware, fittings, electrical parts, etc. Plus a $40,000,000 inventory of new and surplus parts.

Complete catalog on request

COLLINS ENGINEERING COMPANY

9054 Washington Blvd. Culver City, Calif.


WANTED: Communications Supervisor possessing airline background capable of full charge operations communications program and electronics research and development in small airline. Reply Box No. 709, AMERICAN AVIATION Magazine, 1025 Vermont Ave., Washington 5, D. C.

Aircraft radio and instrument mechanics for work at Ithaca, N. Y. Write Personnel Director, Robinson Airlines, Ithaca, N. Y.

**Wanted:** P & W R1340-AN1 engines, engine parts, accessories, AT-6 propellers, blades or airframe parts. Will take any quantity, paying good price. Write, wire, phone. Citrus 1-5128. Carl Turner, 1007 Airway, Glendale, California.

**Wanted:** BTs, with P & W R985 engines only. Will pay highest market price, whether you have one or hundred, either flyable or non-flyable. Write, wire, phone. Citrus 1-5128. Carl Turner, 1007 Airway, Glendale, California.

## *Advertisers In This Issue*


| ADVERTISERS | PAGE |
|---|---|
| AiResearch Manufacturing Co. | 18 |
| Allison Division, General Motors Corp. | 5 |
| American Airlines, Inc. | 7 |
| Beech Aircraft Corporation | 42 |
| Bendix Aviation Corp., Products Division | 3rd Cover |
| Braniff International Airways | 32 |
| Cities Service Oil Company | 2nd Cover |
| Collins Radio Company | 21 |
| Conmar Products Corporation | 27 |
| Continental Motors Corporation | 37 |
| Delta Air Lines, Inc. | 35 |
| The Albert Dickinson Co. | 40 |
| The Electric Auto-Lite Company | 25 |
| Flightex Fabrics, Inc. | 44 |
| General Ticket Company | 40 |
| The B. F. Goodrich Company | 8 |
| The Goodyear Tire & Rubber Co. | 3 |
| Kollsman Instrument Corporation | 28 |
| John Oster Mfg. Co. | 30 |
| Phillips Petroleum Co. | Back Cover |
| Robinson Aviation, Inc. | 30 |
| Trans World Airlines, Inc. | 35 |


## CAA Airworthiness Directives

**Luscombe Model 8C** aircraft with continental A-75 carburetor engines, which are not equipped with wing fuel tanks or an engine driven fuel pump and the Chevrolet AC-R1 hand pump, have experienced difficulty during takeoff and climb under low fuel conditions. By the next annual inspection but in no case later than October 1, 1951, such aircraft must be modified to provide either an engine-driven fuel pump and a hand-operated Chevrolet AC-R1 wobble pump, or two 11.5 gallon wing fuel tanks and revised fuel system replacing the 14-gallon fuselage tank system, according to Airworthiness Directive 50-37-1.

**Ryan Navion** aircraft must undergo inspection of the throttle cable housing for slippage near the instrument panel by March 5, 1951, and a special stop nut, furnished by the Ryan company, must be installed on the throttle shaft in place of the existing jam nut by April 16, 1951. Action is required due to erratic throttle operation resulting from slippage, by Airworthiness Directive 51-7-1.

**Continental** engines **Model E185** with serial numbers 2600 and below which have not been major overhauled since November 1, 1947, by Continental Motors Corp., or July 1, 1948, by field overhaul agencies, must undergo partial engine disassembly to inspect diameter of push-rod oil holes and the position of the oil-feed hole at the next overhaul or not later than September 1, 1951, according to Airworthiness Directive 51-8-1.

**Beech Bonanza Model 35, A35 and B35** are required to undergo inspection of the rudder pedal bellcrank push rod P/N 35-524144 for heat treatment stamp, "HT," on each part. If the marking is absent, the part must be replaced, with compliance required not later than June 1, 1951, by Airworthiness Directive 51-8-2.

# Cross-Country

## WITH LOCAL OPERATORS

By Page Shamburger

FLORIDA—**Johnny** and **Opal Reaver** own an airport unique in that it's practically downtown. It's **Skyland Airport** in **Panama City**, and they've got good transient trade. About 90% of Johnny's students are GI's, paying cash on the barrel-head for instruction. Of the fourteen privately owned planes on the field, twelve belong to members of the Armed Forces and were bought in the past year.

He's an A & E and a DAMI and says he has more maintenance business than he can handle. Johnny thinks mecs have been charging too much and therefore have put themselves out of business. Even the instruction on Skyland has gone 'way up in the last two months, and the outlook is excellent.

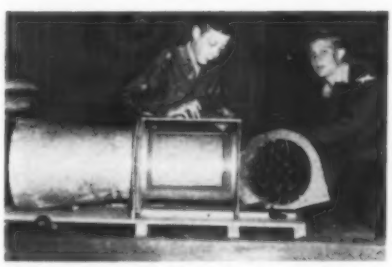
Johnny has an idea on a home-made sand blaster. He soldered a quart oil can on a metal tube, cut a hole through the can and top of the tube. An air hose is connected with one end of the tube and sand put in the can. Results—a steady blast of sand from the other end of the tube. He says it works beautifully, too, and all it costs is about fifteen minutes of time.

**Fannin Airport** in **Panama City** is an airport with no manager. **National Airlines** goes in and out of this 4,000-foot, single-runway field and sells gas to transients, but that's the end of the activity.

✣ ✣ ✣

**Ocala's Marion County School** has the right idea in vocational schools. **Ocala Municipal** is the home of the aviation department of this progressive school, the only one of its kind in the U. S. **Bill McLean** opened this flight and mechanics school in '46. They have six planes and two gliders in their flight department and complete equipment in the A & E division. Remarkable thing, too, practically all the equipment was given to the county by War Assets.

The students have helped build and partition the available hangar space with the CAA making monthly inspection tours. Flying time costs $2.50 per hour "lab fee" and is the only cost to the student. A half unit of high school credit is earned by soloing, with one unit for a private ticket and two for a commercial. The flight school is limited to 25 a year and the A & E to 18. The schools are also approved for GI training and have had a few other adult students. All in all, it's a terrific idea, and really acquainting the local people with aviation. Much credit is due **W. L. McLean, Jr.**, and **John Dean**, instructors, and **T. P. Burgess**, vocational school director, for their untiring efforts.



Wind tunnel made by students of the Aviation Division of Marion County Vocational School; Ocala Airport, Fla.

Roy Browning, manager of Keystone Ranch and Airpark, Keystone Heights, Fla.

**Central Flying Service** is also on Ocala with **C. J. Adolf** as manager. Maintenance work constitutes most of its revenue with students and banner-towing adding to it.

**Fred Strauss** on **Martin County Airport** in Stuart is not in the least discouraged about the aviation outlook. He thinks it's improving! He gets quite a bit of transient trade located right on the East Coast, and though there's not too much profit in gasoline, the volume does make a difference. Fred's got an A-1 Mech in **Bill Shaeffeur**, ex-operator of Honesdale, Pa. Fred's got a good airport, a nice lounge, and snack bar, but it's the good service you get at Stuart that makes you want to stop again.

✣ ✣ ✣

**P. R. Prince**, manager of **Milton School of Aviation**, Milton, has a system for making a couple of bucks . . . more than a couple, in fact. Seems one of the qualifications for being a warrant officer is to be an A & E, and the Army likes to have its mecs as well prepared for civilian life as possible, so an A & E refresher course ending in a license is Prince's main business. The Army pays for it and even furnishes transportation from Eglin Field (100 miles round-trip) and $15 is the only cost to the soldiers. The course lasts 11 weeks with a total of 66 hours, split 33 shop and 33 classroom. All the boys have received their licenses so far, too, and with high grades.

**Col. Charles H. Blanchard** explains the lack of transient business at **Pensacola Municipal** by the fact Pensacola is no longer on direct airways. Danger areas surrounding the city are the cause and no transients just drop by—they have to make a point of coming south to the airport and retracing their course to leave.

The Colonel is managing a nice field consisting of 1,250 acres with beautiful taxi-ways. Even lightplanes don't have the usual curse of practically burning up an engine trying to get off the runway. A new administration building is in the works and ILS will be installed by April 1. Excluding war years, Blanchard has managed the airport since 1933 and is a big factor in its rapid progress.

Limousine service, called **Airlines Service of Pensacola**, is the best operation yet seen. It's reasonable, and you just call 'em and they're there. **H. D. McCord**, the owner, is a pilot and manages the limousines and a U-Drive-It service at the airport.

✣ ✣ ✣

MISSISSIPPI—**Noel English** at **Hattiesburg** is looking for a big increase in the flying business soon. Already more people are asking about buying planes, though it's still in the class of "just licensed, low hours, good condition and less than $500." Noel thinks the answer is a good roadable inexpensive airplane.

**Frank Alessi** of **Gulfport Air Service** is one of the organizers of the "Angler's Flying Club," a club composed of flying fishermen. Six business men of Gulfport, with Frank being the only one in the flying business, bought a seaplane and are off to Chandeleur Island or the nearest trout school every day after work. It's the only way to fish, says Frank, and a good way to promote interest in aviation

Frank Alessi, right, Gulfport (Miss.) Air Service, and Jimmy Kelly of Gulfport show results of a flying anglers' trip.

## WINGS OF YESTERDAY

### 25 Years Ago

From October 7, 1922 to March 15, 1926, the planes of Ryan Airlines, Inc., operator of a passenger air service between Los Angeles and San Diego, spent 2,312½ hours in the air, flew a distance of 168,668 plane-miles and carried 11,136 passengers without injury to pilot or passenger.

•

*Paul W. Litchfield, pioneer manufacturer of lighter-than-air craft in the U. S., was elected president of the Goodyear Tire & Rubber Co. of Akron, Ohio.*

•

A regular undergraduate course in aeronautical engineering, leading to a bachelor of science degree, was initiated at the Massachusetts Institute of Technology.

### 10 Years Ago

(In American Aviation)

Four domestic airlines, American, Eastern, TWA and United formed a corporation, Air Cargo, Inc., to survey the possibilities of engaging in transportation of freight and express.

•

*Army Air Corps planned to step up its pilot training from 12,000 to 30,000 students annually.*

•

Early hearing was scheduled for a bill sponsored by Rep. Jennings Randolph (D., W. Va.) which would create a Department of National Defense and a separate air force command with equal prominence under a unified defense head with the Army and Navy.

## LETTERS

### Covering the Waterfront

To the Editor:

I enjoyed reading your article "Airline Salesmen Cover the Waterfront" in the March 5 issue of American Aviation. It was extremely interesting and particularly so to me, as years ago I did this same work for TWA. Your statement "Airlines had not paid much attention to this potential traffic source until 1947" hit me particularly, and I am sure there are two other airline men in the business to whom it will have the same effect.

In 1934, TWA, UAL and AAL started meeting every trans-Atlantic liner as well as boats from South Africa and Near East points. Leon Morrier still with UAL, Jerry Curry still with AAL and I were the original "I cover the waterfront" salesmen for the airlines in New York. This was even harder work at that time than it is now, as each one of us had to meet as many as four or five boats all within a period of five or six hours and secure lists from the pursers or some steward whom we had selected on the boat. We then had to move rather quickly to see all the people who were going to Chicago, Los Angeles or San Francisco.

In order to cover so many people each one of the three of us were representatives of each airline. In other words, one individual would take the letters from A thru H inclusive, the other from I thru P inclusive and the third would take the remaining letters. Although the slip which the purser gave us indicated that Mr. "Smith" desired UAL to Chicago, if I had the tail end of the alphabet that day, I would introduce myself to Mr. "Smith" as Mr. Morrier of UAL and would then make all the arrangements for his transfer of baggage and ticketing on UAL. The other individuals would do the same. In other words, to cover as many passengers as possible and secure the business in competition to the railroads, rather than compete too much with each other. We found over a period of time that the business secured, which was much larger than the figures which you indicated in your article, came out pretty even for each airline company.

J. CHESLEY STEWART
District Sales Manager
Trans World Airlines, Inc.
St. Louis, Mo.

### Happy Help at Lear

To the Editor:

Nowadays aeronautical manufacturers who can keep their employes from being constantly on the move in search of greener pastures and five cents more an hour consider themselves very fortunate. But the management at Lear regards itself as being twice blessed because our employes, more than being merely content in their jobs, find themselves impelled to express their contentment in spontaneous stanzas of lyrical verse.

For example, note the enclosed (see below) by Jerry Ehle, night foreman at the Lear hangar at Grand Rapids. This was not written for any employe contest or in response to a solicitation of any sort. Apparently, like Shelley's Odes, it comes straight from the heart. Jerry climbed out of the fuselage of an airplane one night and shyly handed these verses to Ed Conklin, director of flight operations. Ed, who knows talent in bards as well as mechanics, thereupon sent the verses to me. Jerry had no thought of being crowned the Poet Laureate of Lear Incorporated, but that is exactly what has happened.

"There's a new and better method
Man has learned to travel by
That's removed the work and worry
Lets you sit relaxed and fly.
You can know your destination
Travel to it without fear;
If the plane that you are flying
Is equipped, complete, by Lear.

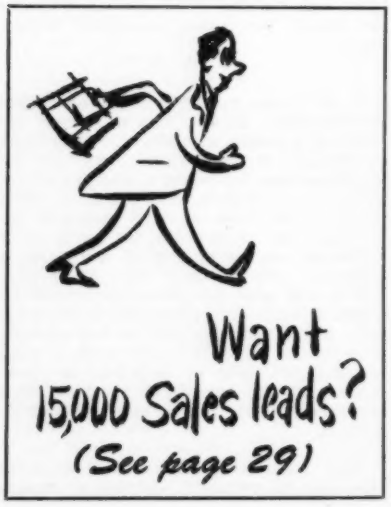
"There's the L-2 Autopilot
V.H.F. with Omni, too
With an on course meter needle
On the panel in full view.
You can find a marker beacon
With the mighty L.R.A.
And still be tuned to tower
Hearing what he has to say.

"With the A.D.F. you'll listen
To your favorite sport or play,
Or tune in your destination
And the hand will point the way.
You'll agree there's nothing like it
You can tune in loud and clear,
Tops in safety and enjoyment
Built right in it, if it's Lear.

"And if you should need to travel
When the weather's I.F.R.
Using all your Lear equipment
You'll know always where you are.
Even then you'll travel safely
And you'll have no need to fear,
You can fly it straight and level
If the autopilot's—Lear."

To what flights of song, may we ask, have other manufacturers inspired their employes?

NORMAN WARREN
Lear, Inc.



### Likes FBO Features

To the Editor:

Being a regular subscriber to American Aviation, I find the magazine enjoyable reading, especially the "Cross-Country" and "The Washington View" by Page Shamburger and Barbara Ward, respectively. I have yet to find another magazine with as complete a report on present fixed base operations, and also the trend as to what is taking place in Washington, D. C., with respect to the fixed base operator.

JACK K. WUSSOW
Badger Aero Activities
Shawano, Wisconsin

### Precious Private Pilots

To the Editor:

American Aviation News Issue of March 12, 1951, quotes "CAA is still looking for a way to screen out non-essential private flyers." To us starving airport operators all private flyers are not only essential, but precious. I am now working for insurance companies, forwarding freight, driving cars in from Detroit, and some sub-contracting to keep this place open. What else are we supposed to do?

BOB HALPIN
Bethany Airport
Bethany, Conn.

## CAA Specification Changes

Cessna 120 and 140 aircraft are approved with Federal AWB-1500 Wheel-Ski, hydraulic version adjustable in flight with required placard, "Do not extend or retract skis while in motion on the ground," by Specification 5A2. Cessna 170 aircraft are approved for equipment with Federal AWB-2500 wheel-ski, by Specification A-799.

Cessna 140, 190 and 195A aircraft are approved with Lear L-2 autopilot installation with servo stall forces at the pilot's controls on the ground, of rudder—20 to 25 lbs.; aileron—12 to 15 lbs.; and elevator—8 to 12 lbs. by Specification A-790.

Cessna 120 and 140 aircraft are approved with SerVair controllable cowl flaps Model SAC-100 in accordance with instructions of SerVair Accessories, P. O. Box 557, Williston, N. D., by Specification A-768.

Beech Bonanza aircraft are approved with 10-gallon auxiliary fuel tank in accordance with instructions of Aircraftsmen, Inc., Oklahoma City, Okla., according to specification A-777.

Aeronca 11CC aircraft are approved with Wright winter shutters installed in accordance with instructions of Wright Flying Service, Williston, N. D., by Specification A-796.

# BOEDY'S ALBUM

**Lillian Kroll**
American Airlines
Dallas—Washington
July 15, 1939

**William & Ella McDuffee**
at Carlton Hotel
Washington, D. C.
July 15, 1939

**Ella S. McDuffee**
(Mrs. William S.
at Lavallette, N. J.
July 18, 1939

**William S. McDuffee**
at the seashore
Lavallette, N. J.
July 18, 1939

**Mildred Belvin**
American Airlines
Newark—Buffalo
July 19, 1939

**E. R. "Ed" Palmer**
Bendix Aviation
Newark—Buffalo
July 19, 1939

**A. H. "Al" DeWitt** (QB)
American Airlines
Newark—Buffalo
July 19, 1939

**R. W. "Bob" Fausel** (QB)
Curtiss Aeroplanes
Buffalo, N. Y.
July 20, 1939

**J. A. "Johnnie" Mattison**
Curtiss Aeroplanes
Buffalo, N. Y.
July 20, 1939

**A. D. Palmer**
Curtiss Aeroplanes
Buffalo, N. Y.
July 20, 1939

**Urbano de la Fuente**
Argentine Navy Air Service
at Curtiss, Buffalo, N. Y.
July 20, 1939

**J. P. "Joe" Healy**
Curtiss Aeroplanes
Buffalo, N. Y.
July 20, 1939

**Harold "Mac" McLane**
St. Louis Airplane Division
at Buffalo, N. Y.
July 20, 1939

**Anne George Warren**
(Mrs. E. A. "Ned")
Buffalo, N. Y.
July 20, 1939

**Ada V. Scott**
(Mrs. C. W.)
Buffalo, N. Y.
July 20, 1939

**J. M. "Johnny" Jones**
American Airlines
Buffalo—Newark
July 20, 1939


Candid snapshots from the famous collection of Kenneth J. Boedecker, Wright Aeronautical Corp.

# BOEDY'S ALBUM

**D. G. "Rich" Richardson** (QB)
American Export Airlines
Newark—Baltimore
July 25, 1939

**Emerson Snyder**
Eastern Air Lines
Newark—Baltimore
July 25, 1939

**E. H. "Pete" Parker** (QB)
Eastern Air Lines
Newark—Baltimore
July 25, 1939

**T. H. "Tom" Huff**
Glenn L. Martin Co.
Baltimore, Md.
July 25, 1939

**Frank Kohler**
Eastern Air Lines
Baltimore—Newark
July 25, 1939

**M.A.C. "Mac" Johnson**
Eastern Air Lines
at Camden, N. J.
July 25, 1939

**E. F. "Ed" Harrington** (QB)
Eastern Air Lines
at Camden, N. J.
July 25, 1939

**J. H. "Jimmie" Roe**
Transcontinental & Western Air
at Pittsburgh, Pa.
July 27, 1939

**W. J. "Mac" McIntyre**
Transcontinental & Western Air
Newark—Columbus
July 27, 1939

**E. "Ernie" Pretsch**
Transcontinental & Western Air
Columbus—St. Louis
July 27, 1939

**Martha Rawlings**
Chicago & Southern
St. Louis, Missouri
July 27, 1939

**Harold E. Lee**
Curtiss-Wright
St. Louis, Mo.
July 28, 1939

**Clare J. Foley**
Transcontinental & Western Air
St. Louis—Newark
July 28, 1939

**Gladys Entrekin**
Transcontinental & Western Air
St. Louis—Indianapolis
July 28, 1939

**R. M. "Bob" Larson** (QB)
Transcontinental & Western Air
St. Louis—Newark
July 28, 1939

**Eunice Fike**
Transcontinental & Western Air
Indianapolis—Newark
July 28, 1939

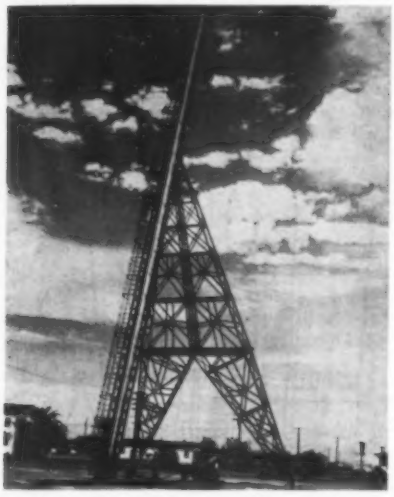

Candid snapshots from the famous collection of Kenneth L. Boedecker, Wright Aeronautical Corp.

# IN FLIGHT

A PAGE FOR ALL PILOTS

## Hot Takeoff

USAF "fly-boys" have a song that goes: "Off we go, into the wild blue yonder—". At Williams Air Force Base in Arizona they've set up a catapault that gets cadets well under way in that direction without benefit of an airplane. That's where the USAF has installed its first ejection - seat tower for regular training of cadets on the intricacies of high-speed bail-outs.



The 100-foot steel tower, designed and built by Allis-Chalmers Manufacturing Co., features a firing track mounted at a 20-degree angle. Seated in an ejection-type seat, the cadet is catapulted 60 feet skyward along this track by a 37-millimeter catapult shell. In the first 60 inches of seat movement the pilot hits the 40-miles-per-hour mark with overall speed for the course about 60 feet per second.

A cable is used to lower the pilot and seat back to the ground but, just in case, an emergency ladder is provided on the side of the 28-ton tower. The Williams AFB tower is three times the size of the test model used at Wright-Patterson AFB.

## Hot Landing

*What should engineers regard as the maximum landing speed they can dare in designing a new airplane? Maj. Chuck Yeager, the Muroc test pilot, thinks no faster than 140 or 145 mph. Yeager has made landings at up to 190 mph, but they were at Muroc where the runway is seven and a half miles long and a pilot doesn't have to worry about over-shooting or under-shooting. For example, in landing the supersonic Bell X-1 after his first flight in the rocket job Yeager said he over-shot "a couple of miles." But at other airports you don't have more than five miles of runway left and Yeager says it is enough to ask the pilot to handle 140 or 145 mph.*

## Avoid the Hollow Log

CAA has a word of warning for you coyote hunters: Hunting coyotes in a lightplane, armed with a shotgun load of buckshot, is mighty effective but can also be mighty dangerous. CAA relates the experience of one pilot with 150 hours' flying in the plane concerned who made a steep turn too close to the ground to recover from the resulting stall. Result: The aircraft was 75% destroyed—the coyote escaped.

"Careless flying on the hunt is like crawling through a wire fence with your rabbit gun cocked," says CAA, "Let's don't allow the coyotes to kill more pilots than the coyotes the pilots kill." Recommendations: Know your airplane, your own limitations and take no unnecessary risks. A stall warning device will be helpful. And another thing, "Don't try to follow the coyote into a hollow log."

## Broader Private Pilot Exam Coming

*Applicants for private pilot certificates probably will be required to pass more comprehensive written exams in the near future. CAA has proposed an amendment to Civil Air Regulations Part 20 on pilot certificates based on recommendations made by a special CAA committee studying 1948 and 1949 private flying accidents, and on questionnaire comments received from fixed base operators.*

*The present written exam consists of 25 questions on civil air regulations. The new examination will include questions on determining aircraft airworthiness, cross-country technique, navigation, weather and general operation of aircraft. About 50 questions will be asked the applicant in multiple-choice form, taken from a list of 200 questions now being prepared by CAA. The 200 questions will be based largely on fixed base operators' comments and are to be published in a convenient form for study.*

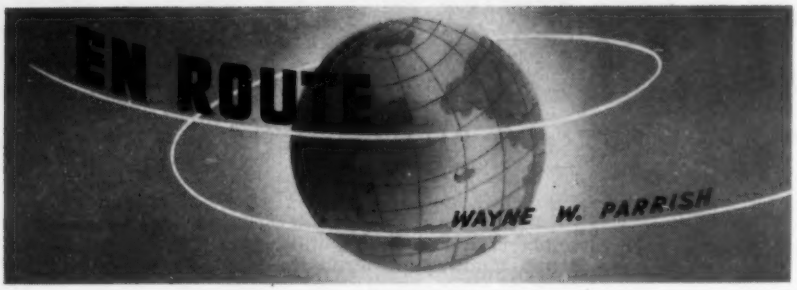
## AMC's New One-Piece Flying

The Air Materiel Command has developed a new one-piece electrically-heated flying suit that should make the pilot's job easier in the cold temperatures of high altitudes and other "cold spots." The new suit, officially dubbed the G-1, gives the pilot greater freedom of movement, it can be worn over standard uniforms and has controls by which the wearer can select three successive stages of heat to suit local conditions.

Unlike the electrically heated suits of earlier times, which were made up of four pieces including an outer jacket, trousers, and a two-piece innerlining, the G-1 is a one-piece affair. It is made up of an outer nylon shell, a nylon innerlining, double-faced wool pile interlining and a cotton interlining which carries the wiring. Pilot to power connections are such that they will release without the pilot's attention in case of an emergency.

Even without electrical power the new suits are said to be as warm as a heavy flying suit and the warm parka hood adds to its comfort. Electrically heated gloves and shoes are not a part of the suit.

Experimental models and service test quantities of the new suit were manufactured by General Electric's Appliance and Merchandise Dept., Bridgeport, Conn.




**Cebu.** My first night in the southern Philippine Islands was in **Cebu,** a port town of 200,000 people about two and a half hours by DC-3 south of Manila.

I was put up in the Crown Hotel in the center of town and the manager, a German by name of **Arnold Duchstein,** had brought together a group of leading local citizens for an informal dinner to tell me about conditions in Cebu and to ask questions about the U. S. Duchstein is the unofficial town greeter, a good host, and knows the area well.

It was quite warm and humid although this was the so-called winter season. My room was on the third floor, walk-up, down at the end of the long corridor. I had a corner two-room affair, the best the hotel had to offer, and slept under mosquito netting. The large windows were kept open for air circulation and every room was open at the top onto the corridor so that any breeze that might be about could sweep through the whole floor. Such arrangement dilutes one's privacy, especially when your neighbor snores, but you get used to that in the tropics. Comfort, what there is of it, comes ahead of privacy.

✣ ✣ ✣

**Crash! Bang!** I had no trouble going off to sleep although the night noises of the town were all about me. But in a few hours I was to learn a lesson about the Philippines which I won't soon forget—and a lesson I had drummed into me at every stop.

Let me illustrate this lesson by suggesting that you imagine you are in a deep slumber and all of a sudden your bedroom door opens and a brass band marches in playing "Alexander's Rag Time Band" with all the stops out and all drums going full blast.

Well, in the Philippines—except for the somewhat secluded Manila Hotel in the national capital—at the very stroke of dawn everything starts popping. Some three or four million roosters start crowing. A half million dogs start barking. Five million babies start bawling. Pigs grunt. Children start playing noisily. The whole city becomes alive all at once. Carpenters start banging away. Cars and trucks begin moving in numbers. I've never heard anything like it and any idea of sleeping is just out of the question.

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**Siesta is Earned.** I had reached the hotel after dark, so after getting rid of any notion that I could continue sleeping, I got up to see where in the world all this noise was coming from. My room, I discovered, looked out over a goodly part of town, partly thatched houses, most of them on stilts, and partly business buildings. Right below my room were pigs and in the next court were children already playing. (It was still just barely dawn, a shocking hour to get up except when you're catching an early plane). A woman with a big basket of fish balanced on her head was already hawking her wares. A furniture maker just below around the corner was already hard at work. The whole town was alive with activity—and it all happened within a few minutes.

Nobody can ever tell me the Filipino is lazy. Maybe he does take a siesta after lunch but he deserves it. He's up and at it before the sun's up. Not only that, he and the roosters get everybody else in town up too.

✣ ✣ ✣

**One Egg? Never!** So your correspondent reported quite early for breakfast and I must say it's rather refreshing to get up at dawn. (New experience!). And now let me tell you about a delightful custom in Cebu. If you want eggs for breakfast you get either three or four. Never just two. I threw the Crown Hotel into a loop by modestly ordering one soft-boiled egg. Mr. Duchstein looked shocked, said it just isn't done in Cebu. One egg, never. The kitchen help would quit. It was an insult. So I had three scrambled eggs and my friends told me this was even unusual, that everywhere else in Cebu an order of eggs is four eggs, no more and no less. Far be it from me to disturb tradition by insisting on a single egg.

Cebu was just about wiped off the map in the war. It was destroyed by the U. S. when the Japs came. It was destroyed again by both Japs and the U. S. when the U. S. returned. Hardly a building was left. It's been pretty well rebuilt since 1945. Chinese merchants moved in and now own or control 99% of all retail trade in the city. But the Filipinos prohibit the Chinese from owning property. The Chinese are quite a problem to the Philippines. Once the Japs were, too, but all of the Japs are gone—either killed or shipped home.

✣ ✣ ✣

**Candles and Flowers.** There is a famous church in Cebu called the **Nino Church** and I happened to visit it while a service was in progress. I have never seen such a beautiful altar. It was surrounded in depth by flowers of all varieties and hundreds of candles and the sweet odor from those flowers spread all through the church and out through the doors a hundred feet from the altar. The combination of sight and smell mixed with the religious atmosphere of the church was most impressive.

Right in the center of town is a caged structure which houses a big wooden cross. This big cross is supposed to cover a smaller one which legend says was placed there by the explorer Magellan and which, the legend continues, keeps on growing. Local people place lighted candles in the enclosure. Magellan was killed in 1521 by natives on the island of Mactan just a mile south of Cebu and the spot is marked by a modest monument. I confess I didn't take the time to see it.

Magellan is quite a local hero. If you know your history you'll recall that Magellan gets the credit for being the first to circumnavigate the globe but the fact is he didn't make it. His ship and some of his crew did continue on around after the natives of Mactan did away with him. Just why he landed at Cebu, which is inside the general archipelago, is one of those historical mysteries.

In contrast to every other island in the Philippines, Cebu is on an arid island. Scarcely a tree to be found anywhere and relatively little rainfall. Elsewhere the islands are lush with tropical growth and rainfall is heavy.

(*Continued from opposite page* 3)

**New Runway Light:** A new type airport runway light has been developed by Westinghouse Electric Corp., which has received an Air Force order for 4,000 of them. Light features a one-piece glass lens that distributes light in a 360-degree circle around the unit. Multiple lens has flattened sides which project high candlepower beam up and down the runway. Curved side of the light distributes high-intensity light fanwise through 180-degree arc to indicate to circling pilots the direction and orientation of runway.

**Smoke Detector:** A new visual smoke detector for aircraft use has been developed by Walter Kidde & Co., Inc., makers of fire detection and protection equipment. Device weighs one and one-half lbs.

## CONGRESS

**Renegotiation Law:** Congress passed and the President signed H. R. 1724 (Public Law No. 9) providing for renegotiation of defense contracts to recapture excess profits. New law, similar to the one in effect during World War II, expires Dec. 31, 1953.

**Anti-Helicopter Bill Killed:** The House has killed a provision which was added to the Treasury-Post Office appropriation bill and which would have hit mail service by helicopters and local service airlines. Proviso stated that "no part of any funds appropriated to the Post Office Dept. shall hereafter be used for the transportation (within the continental limits of the United States) of mail over any route or by any means which the Postmaster General determines to be more costly than other available and equally satisfactory routes and means." Although helicopters were not specifically mentioned, committee hearings made it clear that the proviso was aimed at this form of mail transportation.

## AIRLINES

**AA Buys 3 Listmasters:** Purchase of three Douglas DC-6A Listmasters has been approved by American Airlines' board of directors. The three planes, for delivery in 1952, will increase AA's air freight fleet to 16 aircraft.

**Non-Sked Priorities:** CAA's Office of Aviation Defense Requirements has taken over from Defense Dept. the handling of DO ratings for replacement parts and maintenance needs of all non-scheduled carriers flying equipment with gross weight of 12,500 lbs. or more. Affected are about 70 carriers, 100 two-engined and 40 four-engined planes.

**REA Agreement Unsigned:** A 20% higher air express tariff became effective for all airlines on Mar. 21, but most of the larger airlines had yet to sign the amended Railway Express Agency air express agreement. The amendment, presumably agreed upon after months of meetings between airlines and REA, provided a split of the express revenue dollar to guarantee REA a profit. The 20% rate increase was filed to allow airlines to maintain their present revenue level while taking care of REA's increase. Only nine smaller lines had signed amended agreement on Mar. 21. Whether failure of others to sign indicated that agreement might be discarded was not immediately apparent. It is known that some airlines are dissatisfied. If agreement does not go through, REA may cancel 20-year-old arrangement with airlines.

**Favors LAA Renewal:** Recommendation that Los Angeles Airways' certificate be renewed for an additional seven years for helicopter operations in Los Angeles area has been made to CAB by Examiner **Ferdinand D. Moran.** He stated that the Board should authorize LAA to transport passengers as well as mail and property, and suggested continuation of an exemption which permits mail and property service to any point with a 50-mile radius of Los Angeles. LAA's certificate expired Oct. 1, 1950, but operations will continue pending final decision in the renewal case.

**Coach Fares Extended:** Scheduled air coach operators have been permitted by CAB to extend coach tariffs beyond Mar. 31 to Dec. 31. Ruling applies to all domestic coach tariffs except those for transcontinental operations of American and TWA, which previously were approved through Dec. 31.

**First VHF Airway:** First fully-equipped very high frequency airway, including initial installations of distance measuring equipment, will go into experimental operation between New York and Chicago about July 1, according to CAA.

**Hawaiian's Tax Load:** Hawaiian Airlines' 1950 tax load was so great that it amounted to almost $1 for each passenger carried during the year, and to $10 for every $1 received in mail pay. According to 1950 financial report (see Financial), Hawaiian paid $320,690.55 in taxes, including territorial public utility tax and a 4c gas tax, while carrying 329,249 revenue passengers.

**People:** **Matthew Cullen Wilkin,** who has been general sales manager of Slick Airways, has been elected vice president-sales, and **Henry P. Huff, Jr.,** operations manager, has been named vice president-operations . . . **John B. Walker** resigned as vice president of Braniff Airways and on May 1 will resume presidency of his sales and public relations business, Walker & Crenshaw, New York . . . **R. W. Ryan,** executive assistant to the president of Canadian Pacific Airlines for the past two years and former general manager of the entire system, has been elected vice president of the company.

## CIVIL AERONAUTICS BOARD

**New Charter Regulation:** CAB issued for the first time a regulation governing charter operations of domestic and international scheduled airlines. Effective May 1, regulation will limit off-line charters each calendar quarter to 2½% of revenue plane-miles flown by a carrier in scheduled services during preceding 12 months. Also, between specific pairs of off-line points, limit every four weeks will be eight flights. In international or overseas service, certificated routes cannot be paralleled by charter flights unless certificated lines give permission or CAB approves.

### Actions

- **Eastern Air Lines** and others seeking reversal of CAB decision in Southern Service to West Case turned down by 2-1 vote of Board. Chairman Rentzel and Vice Chairman Ryan said parties failed to advance matters sufficient to warrant reversal. Member Lee, who opposed original decision, again dissented. Majority decision permits three interchange operations to meet needs of south for transcontinental service.
- **Pan American/American Overseas** merger case will be reopened by CAB for further hearings on labor phases. Main question involves establishment of integrated seniority lists for pilots, flight engineers, flight service personnel, and mechanics.
- **Eastern Air Lines'** request for reversal of CAB decision against 4c per mile coach services between Miami and San Juan turned down by Board.

• **Frontier Airlines** granted exemption to originate and/or terminate flights at points short of terminals on Routes 73 (formerly Monarch Air Lines) and 74 (formerly Challenger Airlines). Exemption is valid until final decision by Board in Frontier Certificate Renewal Case.

• **Pan American World Airways** authorized to suspend service at Noumea, New Caledonia, until Tontouta Airport is made adequate for Boeing Stratocruiser operations. Point is intermediate to Fiji Islands and Auckland, N. Z., on PAA's Route FAM-14.

• **Conner Air Lines,** Miami Springs, Fla., and **Currey Air Transport, Limited,** Galesburg, Ill., granted two-year individual exemptions by CAB to continue operations as large irregular carriers.

### Applications and Petitions

• **Wisconsin Central Airlines** applied for exemption to operate non-stop between Duluth and Twin Cities pending resumption of Northwest Airlines' service to Duluth. NWA discontinued the service recently when it withdrew all of its Martin 2-0-2 equipment for modifications. Wisconsin Central said the exemption is sought only for the "emergency period" during which NWA cannot provide the service. It estimated this could run into several months.

• **Central Airlines** amended its certificate renewal application to request continued operating rights for 18 months subsequent to May 1, 1951. Central had asked for five-year extension, but now wants year and a half trial period with Douglas DC-3's which will be utilized system-wide on and after May 1.

• **Puerto Rico Transportation Authority** asked to be classified as an indirect air carrier with authority to contract with scheduled or non-scheduled lines for transportation of special classes of traffic between Puerto Rico and the United States. An agency of the government of Puerto Rico, the Authority was established in 1942 to operate and promote transportation facilities.

### Examiners Reports

• **Frontier Airlines'** certificate for Routes 73 and 74 should be extended through March 31, 1953, recommends CAB Examiner Herbert K. Bryan. Prior to Monarch-Challenger-Arizona merger, Route 73 was operated by Monarch and Route 74 by Challenger. Bryan's recommendation did not apply to Route 93, formerly Arizona Airways', as it does not expire until June 29, 1951. Examiner urged, simultaneous with Frontier certificate extension, that United Air Lines' service at Rock Springs, Wyo., be suspended.

## LABOR

**PAA Settlement:** Pan American World Airways' stewards and ground personnel received pay increase of 6c per hr. as result of mediation conferences conducted by National Mediation Board. Stewardesses were awarded flat $6 a month raise. The settlement, which averted a threatened strike, also provided for an escalator clause tied to cost-of-living index.

## IN GENERAL

**DPA Electronics Board:** Establishment of an electronics production board which will be responsible for overall coordination of electronic production under the mobilization program has been announced by Defense Production Administration. Chairman will be appointed by DPA Administrator **W. H. Harrison,** and board will include representatives of NPA, Atomic Energy Commission, DPA and Defense Dept. Board's primary function will be to see that "no electronic bottleneck stymies any element of the defense effort."

## CIVIL AVIATION

**$9 Million for Wichita:** Air Force will reportedly pay city of Wichita $9,000,000 for its municipal airport, which is being taken over as an AF Boeing B-47 combat crew training base. City has $1,250,000 investment in field, but replacement cost at today's prices would be close to $9,000,000. New municipal airport will be west of the city at a still undetermined site.

**1950 Airframe Shipments:** Shipments of complete civil aircraft in 1950 amounted to 5,924,400 airframe pounds, about 800,000 under 1949. Total horsepower of civil aircraft engines was 1,646,000 against 1,231,500 in 1949.

**Aero Commander Distributor:** Trans-Texas Airways has been named as the first sales and service division distributor for Aero Design and Engineering Co.'s Aero Commander, twin-engined executive plane. TTA will cover Texas and Louisiana.

## FINANCIAL

### Manufacturing

**United Aircraft Corp.** reported 1950 net income of $13,204,128 on sales of $269,256,388, compared with 1949 profit of $10,093,182 on $227,085,032 sales. Backlog at end of 1950 was $715,000,000, more than double the backlog a year earlier. Current assets were $134,467,921 against liabilities of $44,493,907.

**Boeing Airplane Co.** reported 1950 net earnings of $10,826,558 against 1949 profit of $4,411,348. Sales and other income in 1950 totaled $307,806,262 compared with 1949 sales of $287,012,824.

**Republic Aviation Corp.** reported net income of $2,355,006 after taxes in 1950 on sales of $57,713,432.

**Solar Aircraft Co.** had net income of $563,186 for nine months ended Jan. 31 against $906,839 net for same period last year. Earnings for quarter ended Jan. 31 were $304,192 compared with $201,417 profit for same 1950 period.

### Airlines

**Delta Air Lines** had $376,129 net profit after taxes for January and February compared with $98,248 net in same 1950 months. Two months' operating revenues were up 37% to $4,063,379 while expenses rose 19% to $3,274,671.

**Hawaiian Airlines** had a 1950 net loss of $54,720 compared with 1949 profit of $54,427. Contributing to loss were higher territorial taxes, shrinking mail pay and reduced passenger fares, the latter effected to meet those of a competitor. Average passenger fare fell from $9.67 in 1949 to $8.96 last year. Mail pay, at rate of 60c a ton-mile, was only $32,733, down $5,000 from 1949, and amounted to less than 1% of total operating revenues. (See Airlines).

**Philippine Air Lines** reported 1950 net profit of $354,740 compared with 1949 loss of $1,422,385. Revenues were $13,865,969 against expenses of $13,568,400 compared with 1949's $12,529,761 and $13,643,070, respectively.

**Wisconsin Central Airlines'** 1950 net profit after taxes and depreciation amounted to $92,112, with operating revenues of $1,803,478 and expenses of $1,642,416.

**Trans-Canada Air Lines** reported over-all deficit of $1,325,205 for 1950 compared with $4,317,593 loss in 1949. Entire 1950 loss was chargeable to Atlantic operations, with domestic system showing profit for first time since end of war.

### Dividends

**Delta Air Lines** declared 25c per share dividend payable Apr. 17 to stockholders of record Apr. 3.

**Republic Aviation Corp.** declared dividend of 25c per common share payable Apr. 17 to stockholders of record Apr. 2.

**Seaboard & Western Airlines** voted 25% stock dividend payable Apr. 30 to stockholders of record Apr. 19.

## AROUND THE WORLD

**U. S.-French Agreement:** U. S.-French civil aviation conferences in Paris concluded with agreement that will enable Pan American World Airways to operate beyond Nice, France, to Rome as part of its Atlantic service. Route will now be from U. S. via Spain and Marseilles or Nice into Rome and beyond. PAA presently terminates at Nice. Air France was given route from Martinique and Guadeloupe to New York, and permission to stop at Houston on Paris-New York-Mexico City line. Latter route lacks Mexican approval and has never been operated. Significantly, conference did not result in any Fifth Freedom restrictions on U. S. carriers.

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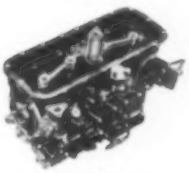

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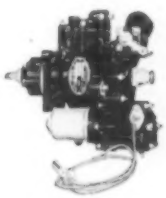

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NEWS ISSUE

Entered as Second Class Matter

April 9, 1951

Vol. 14 No. 38

6 APR 1951
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SERIAL RECORD

## a LOOK at the WEEK

Air Force is reported concerned over wide disparity in prices charged by civilian contractors for maintenance and overhaul work.

•

*CAA will require twin-engined helicopters for unrestricted passenger operations and until they're available will limit single-engine flights into congested areas. Trend seems to be toward twin-engine single-rotor helicopters, similar to one Sikorsky is developing for Marines.*

•

Despite reports to the contrary, Defense Mobilizer Charles E. Wilson still insists there'll be some kind of a Controlled Materials Plan in effect later this year.

•

*Percentage of their business that suppliers of materials must accept in defense rated orders will probably be increased by National Production Authority. In some cases, civil buyers have been able to get materials faster than defense industries because of percentage ceiling.*

•

Municipal airport operators are burned up by lack of planning and coordination between various military commands as to their needs on such airports. One command doesn't know what another's plans are for same field, officers aren't familiar with problems. Result has been confusion.

•

*Airlines will receive $20 million in revenue from armed forces this year, according to estimates by military transportation officials. More than half will be from Air Force.*

•

Military services' conversion to ultra high frequency communications equipment, which is moving at a fast pace, will cause some problems at commercial airports not equipped to send or receive on UHF. Air Force is now working out a program to provide CAA towers with some UHF equipment.

•

*One civil aviation mobilization task group report—training—has been delayed. Principal reason is change in Air Force policy since appointment of the task group. AF at first said it wouldn't use civil training facilities, later changed its mind completely, and report must be written to reflect change. Other reports, plus final overall report, are expected to be ready by Apr. 15 deadline.*

## Weight Limit Waived on Army Planes

The Chiefs of Staff of the respective military services have agreed to waive the [illegible] weight limitation on Army planes, and the Army has placed orders for four new types of aircraft that it otherwise would have been prevented from buying.

Types ordered are:

**Helicopters:** Transport helicopters, a major point of emphasis in Army's current aircraft procurement program, figure prominently in new purchases. Orders included undisclosed numbers of Piasecki H-21 and Sikorsky H-19 heavy helicopters, and Piasecki HUP-2 seven-place helicopter.

**Liaison Plane:** A "substantial" number of Canadian-built deHavilland L-20 Beavers are included. Beaver is a four-place liaison type.

Regulations originally limited the Army to procurement of fixed wing aircraft weighing less than 2,500 lbs. and rotary wing aircraft under 4,000 lbs. The regulations have not yet been amended to specify what weight limitations will apply; the waiver does not give the Army an unlimited weight ceiling.

## CAB Outlaws "Influence" Attempts

A crackdown on persons trying to influence Civil Aeronautics Board members or staff in connection with pending cases is now possible under a new regulation put into effect last week by CAB.

The regulation contains a "code of ethics" drafted by nine airline lawyers who are serving CAB as an advisory committee on practices and procedures.

Although the regulation, first of its kind ever adopted by CAB, came at a time when federal agencies have been under scrutiny on influence charges, members of the lawyers' committee emphasized that it was not the outgrowth of current investigation scares, but has been in preparation for several months.

Meanwhile, counsel for the Senate Select Committee on Small Business, which will hold hearings this month on CAB's new economic regulation restricting nonscheduled air carriers (see Airlines), said reports of influence on Board members have been heard on Capitol Hill and might conceivably be aired in this type of hearing.

The CAB code aims not only at outlawing influence attempts but also at shortening CAB hearings by eliminating wrangling and delaying tactics. Pertinent provisions:

**Private Contacts:** It is improper that (1) there be any private communication on a case's merits to a member of CAB or its staff or the examiner in the case by any person, either in private or public life, unless provided for by law, (2) there be any private communication on a case's merits to a CAB member or the examiner by any members of CAB's staff who participate in the hearing as witnesses or counsel, (3) there be any effort by any person interested in a case to sway CAB's judgment by trying to bring pressure or influence to bear on members or the staff, or that such person or any CAB staff member, directly or indirectly, give statements to press or radio, by paid advertisements or otherwise, designed to influence CAB's judgment in a case.

**"Unusual Hospitality":** It is "particularly improper" that persons interested in CAB cases should provide "unusual hospitality" to the Board or its staff, "nor should such hospitality be accepted."

CIRCULATION COPY 2

**Conduct at Hearings:** Lawyers shall not indulge in "offensive personalities, unseemly wrangling or intemperate accusations or characterizations," but shall observe "scrupulous standards of fairness, candor and consideration for the rights of others . . ."

**Shorter Hearings:** Cases shall be presented more concisely, and delaying tactics shall not be engaged in.

**Penalties:** For violations of the rules, CAB may, after hearing, "disqualify and deny temporarily or permanently the privilege of appearing or practicing before it . . ." Although there is no provision for penalizing persons other than lawyers, informed sources said that they would be open to "individual censure" by the Board.

Lawyers who drafted the new code were former CAB Chairman L. Welch Pogue, Albert F. Beitel, Gerald P. Brophy, Paul M. Godehn, Hamilton O. Hale, Edward J. Hickey, Jr., William E. Miller, Hubert A. Schneider and Howard C. Westwood.

## MANUFACTURERS

**Major UAC Expansion:** In a privately-financed major expansion program, United Aircraft Corp. will construct two new plants at Bradley Field, Windsor Locks, and North Haven. Windsor Locks plant will house complete facilities of Hamilton Standard Division, which will transfer from the East Hartford plant it has occupied for 20 years. Pratt & Whitney Aircraft Division will move into the old Hamilton Standard plant at East Hartford, giving the engine division 500,000 sq. ft. more space. North Haven plant will be a P&W satellite, making jet engine parts which will be fed into main production line at East Hartford. Combined floor space available at new plants will be over 1,000,000 sq. ft. and they will hire about 10,000 workers.

**Nash to Build R-2800:** Nash-Kelvinator Corp., Detroit, will build the 2500-hp R-2800 piston engine at its plants in Milwaukee and Kenosha, Wis., under terms of a license agreement now being negotiated with Pratt & Whitney Aircraft Division of United Aircraft Corp.

**More F-89's Ordered:** Air Force, for second time in less than three months, has increased orders for Northrop's F-89 Scorpion all-weather interceptor, raising company's backlog to all-time high of about $300,000,000. Personnel now exceeds 9,700 and company is making plans for additional expansion.

**Fred Herman Dies:** **Fred Herman,** 58, general manager of Douglas Aircraft Co.'s Long Beach division, died Mar. 26. He had been with Douglas 21 years.

**People:** **George S. Cooke, Jr.** has been named manager of The Glenn L. Martin Co.'s B-57 Canberra light bomber project. **W. E. Groff** was named manager of the overseas operation, to coordinate the project with the British English Electric Co. . . . **George Thorson** has been elected vice president in charge of aircraft sales for Meletron Corp., Los Angeles manufacturer of pressure switches . . . **W. E. Douglas,** second son of **Donald W. Douglas,** president of Douglas Aircraft Co., has been named project coordinator of missile production in the Santa Monica division.

### Expansion

**Hiller Helicopters** has acquired new plant in Redwood City, Calif., to expand gear and tool manufacturing operations. Plant has 22,000 sq. ft. of floor space.

**Kaiser-Frazer Corp.** will double manufacturing space of its aircraft division plant at Oakland, Calif. Plans call for completion by June of new one-story building with 50,000 sq. ft. capacity. Building will be used for production of components of Lockheed P2V Neptune patrol bomber.

## PLANES & EQUIPMENT

**Twin-Engined Piper:** Piper Aircraft Corp. has applied to CAA for type certification of a twin-engined aircraft, designated Model PA-23. W. T. Piper, president, stated, however, that no work has been done on the plane and won't be "for a long, long time." There is speculation that the PA-23 will be Piper's bid for the local service type aircraft market. Advantage of early application for type certification is that it sets some regulations for production at present requirements.

**Spoilers on DC-6B:** Douglas Aircraft Co. has agreed to install spoilers on its DC-6B's, and deliveries of the plane are expected to start in about three weeks. CAA had insisted on spoilers as a means of fulfilling a regulation pertaining to stall characteristics of transport aircraft. Certification was held up when Douglas and airlines resisted installation of spoilers because the post stalled condition they are designed to improve is one which has never been encountered in millions of miles of DC-6 operation. Further, they felt spoilers might have adverse effect on landing characteristics. Now, however, Douglas is said to be satisfied that installation won't have this effect. First deliveries will include three planes for United, two for American, and one for Slick.

**TB-50D Delivered:** The first TB-50D navigator-bombardier training version of B-50 bomber has been delivered to Air Force by Boeing Airplane Co. Plane was developed to train combination navigator-bombardiers for high-speed jet bombers like the Boeing B-47. Planes like Convair T-29, Douglas TC-47 and North American TB-45 will be used in earlier stages of training, with TB-50D's used as advanced trainers.

**First F-86E Delivered:** The first production model of the F-86E has been delivered to Air Force by North American Aviation, and accelerated service tests will start shortly at Edwards AFB, Muroc, Calif.

## MILITARY

**Flying Training AF:** Air Force is setting up a Flying Training Air Force, with headquarters at Waco, Tex., to handle training of pilots and crews. Organization will be established in May under Maj. Gen. **Warren R. Carter,** now deputy commander for flying in Air Training Command.

**Northrop Institute Selected:** Northrop Aeronautical Institute, Hawthorne, Calif., has been selected by Air Force's Air Training Command as a training center for ground personnel. AF recruits who have completed basic training will take 16½-week course to qualify them as airframe repairmen.

**SAC Base at Lake Charles:** The Lake Charles, La., air base will be reopened by Air Force for use by Strategic Air Command. Field may be a mixed civil-military operation.


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**People:** **Kenneth L. Vore** has been named director of Defense Department's Military Traffic Service, succeeding **Grover Plowman,** U. S. Steel Corp. executive, who will serve Secretary of Defense as special consultant on military traffic matters . . . Maj. Gen. **William H. Tunner,** who has been on temporary duty as special advisor on troop carrier operations to AF Chief of Staff, has rejoined Military Air Transport Service as deputy commander in charge of air transport operations.

## AIRLINES

**Non-Sked Rule Postponed:** At the request of the Senate Select Committee on Small Business, CAB has postponed for 30 days its economic regulation which would limit non-scheduled airlines to three flights a month between heavy traffic areas. Effective date was to have been Apr. 6. The Senate group will hold hearings later this month on the effect of the regulation. Meanwhile, two non-skeds—Miami Airlines and American Air Transport—have sought a court injunction against the CAB rule, stating that it would make it impossible for them to operate without losing money.

**Immigration Ban Lifted:** A bill (H. R. 2339) strongly favored by U. S. international airlines which allows certain former members of fascist and communist organizations to enter the U. S. has passed Congress and been signed by the President. It permits entry of "nominal" former members of totalitarian groups if they joined before the age of 16 or if they entered the organizations to get food, clothing or jobs, or were compelled by law to join. Airlines are now clearing backlogs of hundreds of European passengers who have been waiting to come to U. S. since November when the McCarran Act banned entry of persons who had been "members of or affiliated with" totalitarian groups.

**New TWA Financing:** CAB has been asked to approve agreements between TWA, Hughes Tool Co. and Equitable Life Assurance Society aimed at raising $10 million for TWA by end of 1952, primarily through sale of airline's unissued capital stock, to pay for new Constellations and Martin 4-0-4's. First $5 million is to be raised by end of 1951, and Hughes agrees that if other purchasers are not available it will buy enough stock to provide net proceeds to TWA of $5 million. Hughes also agreed to lend TWA $5 million if it is impossible for the airline to sell the stock. Same terms apply to raising of second $5 million by Dec. 31, 1952. Agreements were necessary to obtain consent of Equitable, which owns all TWA debentures issued and outstanding under a 1945 indenture, to purchase of Connies and 4-0-4's. TWA also asked CAB approval to sell Hughes one 4-0-4 from its order of 41 such planes, and one Connie from its order of 26.

**NAL Buys 2 DC-6B's:** National Airlines has bought two more Douglas DC-6B's, making a total of eight the carrier now has on order and a total DC-6B investment of almost $10,000,000.

**More Mail Pay for NWA:** Adjustment in Northwest Airlines' domestic and Pacific mail rates which, among other things, will give the line $1,573,000 in back mail pay, is proposed by CAB. NWA filed emergency petition on Mar. 16, one day before grounding of Martin 2-0-2 equipment. For 1951, CAB proposes domestic pay of $3,971,000, about $800,000 more than is called for by present rates. For future years, total will be about $2,400,000 plus amortization costs. On Pacific, for 1951 and beyond, rate will be $3,800,000, or about $700,000 less than 1950. All rates are temporary.

**Military Business:** Airlines are expected to receive a substantial additional amount of military business under new military policy covering travel allowances during permanent changes of station. Effective Apr. 1, both officers and enlisted men have option of receiving transportation and per diem ($9 per day) or taking 6c per mile. They also get 6c per mile for wives and 4c for children between 5 and 12. The increase for enlisted men (formerly 3c) brings air transportation within their reach for the first time.

**Cards for Passports:** Certificated flight crew members of U. S. international carriers can now obtain a card from CAA which will serve in lieu of a passport for temporary admission to foreign countries. Member states of International Civil Aviation Organization have established the card as a valid travel document in cities adjacent to the terminal airport until the departure of the airman's next regularly scheduled flight. Application for card should include two full face photos and should be made on Form ACA-2116 to any CAA aviation safety district office or international field office. Cards are issued free.

**Military Discount:** Domestic airlines have offered military agencies a 10% discount on military travel during fiscal 1952. The discount, same as that in effect in recent fiscal years, was offered through Air Traffic Conference of ATA.

**C. R. Smith Returns to AA:** **C. R. Smith,** president of American Airlines, has returned to the company after a tour of duty as advisor on military procurement to the Under Secretary of the Air Force.

**People:** **Charles W. France,** one-time vice president-maintenance and engineering for Eastern Air Lines and wartime vice president-general manager of Curtiss-Wright's St. Louis plant, has been elected vice president and general manager of Ozark Air Lines. He has been acting in an advisory capacity with Ozark since last December . . . **David Watson,** secretary-treasurer of Hawaiian Airlines, has been promoted to vice president-treasurer, and **John S. Pugh** has been named secretary in addition to his duties as general traffic manager . . . **K. Robert Hahn** has resigned as secretary and assistant vice president of Lake Central Airlines and is joining Lear Inc., Grand Rapids, Mich., as contract administration officer.

## CIVIL AERONAUTICS BOARD

### Applications and Petitions

• **Continental Air Lines** applied for certificate to operate between Kansas City and Houston via Bartlesville, Tulsa, Oklahoma City, Lawton-Fort Sill, Wichita Falls and Dallas/Ft. Worth. For early decision. Continental asked consolidation of the application with Braniff Airways' pending request to serve Tulsa on Route 9. Latter has been set for hearing June 12.

• **Pan American World Airways** advised CAB it will seek reconsideration of portions of Board's decision in National Airlines Dismemberment Case, Docket 3500. Chief concern, PAA said, is with CAB ruling that Panagra/National interchange proposal will get expedited decision while PAA/Eastern interchange must await decision in New York-Balboa Through Service Proceeding.

• **Eastern Air Lines** asked CAB to deny E. W. Wiggins Airways' application for exemption to operate between Pittsfield, Mass., and New York. Otherwise, Eastern claimed, Wiggins would be placed in position to operate New York-Boston and New York-Albany services in competition with existing carriers.

• **Continental Air Lines,** with concurrence of Railway Express Agency, has filed amended air express agreement with CAB. It is open to concurrences of other airlines but only Ozark has concurred thus far. Industry spokesman said filing is not construed as official industry filing. Most major airlines have not signed the agreement under which REA would realize substantially more revenue from air express business while the airlines' share generally would remain the same.

### Actions

• **Four non-scheduled airlines** ruled out of the irregular carrier field by CAB in actions on individual exemption applications. Arrow Airways, Burbank, whose letter of

registration was previously revoked, was ruled out immediately when CAB denied exemption request without granting right to appeal. Other three, turned down on appeals without hearing, were: Missouri Airways, St. Louis (termination effective Apr. 25); Cook Cleland Catalina Airways, Willoughby, O. (termination effective Apr. 27); and, Associated Airways, Burbank (termination effective Apr. 28).

• **Central Air Transport**, Miami, denied individual exemption to continue as a large irregular, but given 30 days to appeal. CAB said the line operated "route type" services between New York and Los Angeles in violation of the Act.

• **Cape Cod Flying Service**, small irregular carrier, granted exemption from May 1 through Oct. 1, 1951, to transport persons and property between Boston and Provincetown, Mass., without regard to frequency and regularity of service.

### Examiners Reports

• **All American Airways** recommended by CAB Examiner Richard A. Walsh to extend services from Atlantic City to New York/Newark via Asbury Park/Long Branch/Monmouth, N. J., subject to a restriction against non-stop service between Atlantic City and New York.

### CAB Calendar

**Apr. 10**—Oral argument before the Board in Transcontinental Coach Type Service Case. Washington, D. C. (Docket 3397 et al.)

**Apr. 16**—Hearing in Aero Finance Corp. Individual Exemption Case. Washington, D. C. (Docket 3945).

## CIVIL AVIATION

**AOPA Insurance:** A group life insurance program for its members has been announced by Aircraft Owners and Pilots Association. Program will provide a $5,000 policy for $15 per quarter and will not require usual additional premium of from $3.75 to $5 per thousand for non-airline flying. Rate compares favorably with ordinary group insurance. All AOPA members are eligible, including crop dusters, reserve and active service pilots (except in combat areas), commercial pilots and flight instructors. Underwriting company is Minnesota Mutual Life Insurance Co. Minimum of 1,000 AOPA members must apply by May 1 to put program into effect.

**New Dates for Wichita:** Air Force has announced new dates by which private planes will be excluded from Wichita Municipal Airport, which AF is taking over for use as B-47 crew training base. Only commercial planes will be permitted to operate from the field after Oct. 1. All planes without two-way radio must stop operations on June 11; planes with two-way radio may continue until Aug. 20. Individual consideration will be given by AF to allow executive aircraft to make infrequent flights from field after Oct. 1 if they have adequate radio.

**Northington Heads NATC:** **Robert Northington**, of Piedmont Aviation, Winston-Salem, N. C., has been elected president of National Air Taxi Council for its second year of operation. **Sam Freeman** and **Walter Laudenslager** were elected first and second vice presidents, respectively. It its first year, NATC completed air taxi agreements with 21 airlines and certified 31 taxi operators.

**Eastburn Joins NAA:** **Glen B. Eastburn**, former manager of Los Angeles Chamber of Commerce's aviation department, has been elected vice president of National Aeronautics Association and will head a drive to build chapter strength.

## FINANCIAL

### Airlines

**Trans World Airlines** reported consolidated net earnings of $6,495,000 in 1950 compared with $3,729,000 profit in 1949. All-time high in total operating revenues of $117,073,000 was up 10.8% over 1949 while operating expenses increased 6.7% to $105,552,000.

**Eastern Air Lines** earned $5,257,874 after taxes in 1950 against $1,967,905 net in 1949. It was largest profit in company's history and its 16th consecutive year of profitable operation. Passenger revenues were $71,315,742, or 91% of total revenues. Air mail revenues of $3,421,850, up 4.6% over 1949 were $1,200,000 less than company's tax provision for the year. Operating expenses totaled $69,100,824, a 4.8% increase.

**Pioneer Air Lines** reported 1950 net profit of $135,611 on total operating revenues of $3,335,140 and total expenses of $3,106,861, compared with 1949 adjusted net profit of $125,633.

**California Eastern Airways** reported net profit after taxes of $244,104 for 1950 compared with $221,435 profit in 1949. Principal revenues last year came from aircraft maintenance and overhaul activities.

**Capital Airlines** had operating profit of $31,267 and net profit of $7,120 after taxes in February. It was first February profit in company's history. Net profit after taxes for first two months of 1951 was $15,462 against $227,287 loss in same 1950 period.

### Manufacturing

**Grumman Aircraft Engineering Corp.** had 1950 net income of $6,242,064 on sales of $102,312,498, against 1949 profit of $3,191,520 on $59,756,838 sales.

## LABOR

**Raise for AA Employes:** Additional cost-of-living pay increases will be granted during April to about 7,500 American Airlines employes. First increase, effective Apr. 7, was 6c per hr. to 4,000 maintenance and stores employes, with a $4.80 semi-monthly raise beginning Apr. 20 for 3,500 employes in overtime job classifications paid in accordance with company regulations.

## IN GENERAL

**NPA Orders:** National Production Authority has issued the following orders:

**M-5 Amended:** Supply of aluminum available for defense rated orders increased by 15%, effective Apr. 1. Amendment requires aluminum producers or fabricators to accept DO orders for shipment in any one month up to the listed percentages of their average monthly shipments of such products during first eight months of 1950: sheet, 55%; extrusions and tubing, 60%; rolled shapes, 45%; rod, bar, wire and cable, 50%; forgings and pressings, 75%; castings, 55%.

**M-33 Amended:** Molybdenum, scarce metal used in alloying corrosion resistant steel, will be allocated on the basis of end-use essentiality starting May 1.

## AROUND THE WORLD

**AF Buys Viscounts:** Six British-built Vickers Viscounts have been ordered by Air France to supplement Languedocs and DC-4's used by company on European routes.

## OFF THE PRESS

**Handbook of Emergency Defense Activities**, published by Government Services Administration. Contains organizational outlines, names, addresses and telephone numbers of officials of federal agencies engaged in the defense program. Available at 25c each from Superintendent of Documents, Government Printing Office, Washington, D. C.

## COMING UP

**April 16-18**—SAE aeronautic meeting and aircraft engineering display, Hotel Statler, N. Y.

**April 19-21**—Airport Operators Council annual meeting, Hotel Peabody, Memphis.

**April 23-25**—American Association of Airport Executives annual meeting, Minneapolis, Minn.

**April 24-26**—Air Transport Association annual engineering and maintenance conference, Drake Hotel, Chicago.

**April 26-27**—American Helicopter Society annual forum, Washington, D. C.

### International

**April 24**—ICAO Communications Div. meeting, Montreal.

**June 5**—5th Session, International Civil Aviation Organization, Montreal.